Trust Relationships in Employment Relationships: The Role of Trust for Firm Profitability

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Abstract

Trust between actors in firms *per se* as well as in the employment relationship, i.e. between the representatives of employees and the management, is usually seen in the literature to affect firm performance positively, yet to date there has been no systematic analysis of the effect of different forms of trust, including mutual trust, on firms' financial performance. In this article we argue that only mutual trust, rather than all forms of trust, is sufficient to systematically constitute an advantage for firms and ultimately materialize in firms' profitability increases. We test our hypotheses on the basis of a representative and matched employee/employer side data set of firms in the member states of the European Union. Our analysis confirms our hypothesis that only strong mutual trust is able to systematically impact increases in firm profitability positively and weaker forms of trust and unilateral trust do not suffice.

Keywords

Employment relationship, trust, firm performance, European Union

JEL Classification

J53, J80, M54, D22

Introduction

Trust is usually considered in the academic literature to have beneficial effects on the functioning, efficacy and performance of all kinds of institutions and organizations including firms (e.g., Algan and Cahuc 2010, Beugelsdijk et al. 2004, Dincer and Uslaner 2010, Fukuyama 1996, Knack and Keefer 1996, Lane and Bachmann 1998, Zak and Knack 2001). As regards the role of trust in the *employment relationship* inside firms, i.e. of trust between the employee side and the employer side, as one *interpersonal* and *intra-organizational* dimension or relationship, a similar beneficial role and effect prevails in the literature (e.g., Blanchard and Philippon 2004, Fox 1974, Friedman 1993, La Porta et al. 1997) even though limited empirical evidence exists to substantiate a positive relationship between different forms of trust within the employment relationship and performance.

As regards different forms of trust between the employee and employer side, so far, the literature has not fully considered both sides in the relationship equally but concentrated predominantly on the role of trust from the employee side in the employer side, e.g. on unilateral trust in the management (e.g., Bryson 2001, Brown et al. 2015). With very few exceptions, little research can be found on trust in the other direction, i.e. on trust of the employer side in the employee side. Even rarer is research on the effects of mutual trust in the employment relationship (e.g., Mishra and Mishra 1994, Nienhueser and Hossfeld 2011).

Furthermore, there is some literature that investigated the role of trust regarding the (non-)acceptance and implementation of various organizational changes by the employee side (e.g., Davis et al. 2000, Mishra and Mishra 1994) but only very few studies (e.g., Brown et al 2015, Katz et al. 1985) investigated if trust between the employee and employer side in materializes in a positive financial performance of firms.

Against this background, the purpose of this study is to investigate the role of trust in both directions, the intersection, i.e. of mutual trust, in the employment relationship, (i.e. between the employee representation and the management in firms), and assess the effect of trust on the development of firm profitability. Even though we fully agree with the prevailing perception in the literature on the beneficial role of trust between actors in organizations *per se*, we will argue that in the employment relationship mutual trust is decisive and unilateral trust, which might not necessarily be matched by the other side, may not be sufficient to impact on firms' profitability development.

As will be argued, the rationale behind the pivotal role of mutual trust is that it not only reinforces efficient interaction between parties in negotiations (Axelrod 1984) as it reduces uncertainty and complexity (Luhmann 1979) as well as transaction costs (Fukuyama 1996), but in particular that it encourages risk taking behavior (Ross and LaCroix 1996) by both sides in the employment relationship. This risk-taking behavior is needed to bargain and strike deals which may involve short term losses for one party but which lead to long-term mutually beneficial outcomes including increases in firms' profitability (e.g., Butler 1995, Fehr et al. 2003, Friedman 1993, Nienhueser and Hossfeld 2011).

We test our argument on the basis of a unique and representative matched employee/employer side data set which covers trust relationships at the firm, i.e. company establishment, level between the employer side, i.e. the management, and the employee side, i.e. the employee representatives, in the member states of the European Union (EU). Given that in previous literature the role of trust was only analysed on basis of data from companies in one country or a small number of firms, the coverage and size of the sample used in this paper, we are not only able to pursue a fine grained and comprehensive empirical analysis but to draw generalizable conclusions on the effect of trust in the employment relationship on the development of firms' profitability.

The article is structured as follows. In the next section key literature on trust in the employment relationship is reviewed followed by an outline of our hypotheses on the role of unilateral and mutual trust in the employment relationship on the performance of firms. We then give a detailed overview of the data and methodology used in the analysis and proceed to outline the determinants of developments in firms' profitability as well as discuss any potential issues in our analysis arising because of reverse causality concerns. This then allows us to present the results of our analyses and a summary of the main results concluding with a discussion of the implications of our findings.

Trust in the employment relationship

On basis of the general definition of trust according to Coleman (1990) that an individual has trust in another individual if (s)he voluntary places resources at the disposal of the other individual, i.e. that an individual renders oneself vulnerable, with the expectation that the other individual will not exploit the vulnerability. This means with respect to the employment relationship that trust refers to the situation in which either the employee side and/or the employer side renders itself vulnerable to the other, on the expectation that the other side will not exploit this vulnerability. As the domain of analysis here is the firm level, trust refers to the intra-organizational relationship between representative members of the employee representation and the management, i.e. between the employee and employer side in the employment relationship specifically and not between two specific persons as well as in the institution of the employee representation and the management and not to any other form of trust such as for example institutional or system trust (e.g. Luhmann, 1979; Pitlik and Rode 2017).

However, both sides in the employment relationship contain a number of different actors and dimensions, involving employees and their representatives on the employee side and the management and their representatives on the employer side. So far, the literature has not only investigated trust relationships between different actors (e.g. between the management in general on one side and trade unions on the other or between line managers on one side and employees on the other) but also the effects of trust between one or the other side in each other using various organizational activities and performance indicators as outcomes.

More specifically, one particular strand in the literature analyzed the complexity and interrelationship of different actors on both sides in the employment relationship in a variety of countries. For example Bryson (2001) investigated the intermediating role of trade unions in trust between employees and management in British firms. Kerkhof et al. (2003) analyzed the factors which account for Dutch work councilors' trust in management. Guest et al. (2008) augmented this analysis and explored how workplace practices on the involvement and consultation of employee representatives help to build up trust relations between both sides of the employment relationship. Similarly, Laplante and Harrisson (2008) investigated the factors which reinforce or disrupt trust relations between managers and union representatives in Canadian companies undergoing organizational change.

While the latter studies focused on the determinants of trust relationships in organizations and considered trust to be the dependent variable, another strand of literature used trust as an independent variable and analyzed the effect trust has on companies. Within this strand, some studies investigated the effect trust has on the implementation of different management practices and policies and the management and acceptance of organizational change (e.g., Davis et al. 2000, Mishra and Mishra 1994). Nienhueser and Hossfeld (2011), as another example, investigated the role of trust between managers and work councilors in

German firms, for the implementation of different structures of collective bargaining. Both studies highlight that trust facilitates implementation.

However, also within the latter strand of literature which analyses the effects of trust, there are very few studies which concentrate explicitly on the effect of trust on financial performance, i.e. on the profitability of firms. On the one hand, there are some company case studies, e.g. Katz et al. (1985) in their analysis of 18 establishments of General Motors, which find support for the thesis that trust in the employment relationship has a positive effect on firms' performance. Other studies, e.g. Brown et al. (2015) in their analysis of employee trust in management in British firms, also suggest that unilateral trust of the employee side in the employer side can make an impact on the financial performance of firms.

Thus, there is only very limited evidence available on whether and how different forms of trust within the employment relationship, in particular between the employee' representatives and the management, ultimately materializes in a positive financial performance and therefore on the question of whether trust between both sides in the employment relationship can be an 'asset' for firms in order to gain an advantage.

The role of unilateral and mutual trust in the employment relationship

There seems to be some agreement in the literature that trust is beneficial to the efficacy and functioning of organizations because it affects actors' attitudes and behavior in a way that facilitates organizations to attain their goals (e.g., Lane and Bachmann 1998, Osterloh et al. 2002). Basically, this agreement centers around the goal of firms to increase their profitability. The basic transmission mechanism from trust to goal attainment is that trust affects attitudes and workplace behavior of actors in a way (e.g. via higher motivation and efforts of employees and managers, more communication, etc.) which then leads to and manifests itself in better goal attainment and improved performance (e.g., Davis et al. 2000).

There is no reason why the beneficial role of trust in the employment relationship, as one form of intra-organizational trust (e.g., Lane and Bachmann 1998), should be any different and therefore we can assume that actors' attitudes and behaviors also differ depending upon whether the employee side and the employer side trust each other or not. In fact the literature refers to a number of reasons why trust in the employment relationship affects actors' attitudes and behaviors. Specifically, if there is trust in the employment relationship, the quality and quantity of communication between the employer and employee side can be expected to improve (e.g., Taylor, 1989), which also facilitates important information sharing between the two sides (e.g., Butler 1995) and in turn increases the performance of firms as problem-solving behavior is fostered (e.g., Beersma and De Dreu 1999, Kerkhof et al. 2003). In addition, information sharing between the employee and employer side has the effect of reducing information asymmetries. The latter factor is important as information asymmetries, 'imperfect information' and uncertainty about the other side can potentially trigger (labor) conflicts (e.g., Ashenfelter and Johnson 1969, Godard 1992, Hicks 1932) which negatively affect the performance of companies.

Trust in the employment relationship in general but in particular *mutual trust* between the employee representation and the management, who bargain and negotiate over many important terms and conditions of work and aim to find agreement, *increases* their willingness to compromise and render one-self vulnerable in deals (e.g., Coyle-Shapiro and Kessler 2002, Friedman 1993, Purcell 1974, Walton and McKersie 1965). It is mutual trust and not unilateral trust that enables agreement between the two sides and therefore increases the probability (also in non-zero-game situations) that bargaining parties can strike deals which involve short term losses for one party but which lead to long-term mutually beneficial outcomes including, for example, the profitability of the firm (e.g., Butler 1995, Fehr et al. 2003, Nienhueser and Hossfeld 2011). Thus, it is mutual trust in particular and not necessarily unilateral trust alone that may be pivotal for the efficacy of the employment relationship and decisive for the firms' performance.

In the following analysis we will concentrate on trust between the employee representation in firms, one key actor on the employee side, and the management of the same firm, one key actor on the employer side, in the employment relationship. We will investigate if trust between the employee representation and the management has an effect on the performance of firms for which we use increases in firms' profitability as an indicator. Against the background that trust *per se*, i.e. trust of either side in the other side, fosters communication, information sharing and problem solving behavior even by one side, we hypothesize that any unilateral trust can be expected to have a positive effect on firms' increases in the profitability even though unilateral trust alone might not be sufficient to materialize into increases and thus the effect in the analysis might be 'weak' and possibly statistically insignificant.

However, we expect that this effect is different for mutual trust, which not only fosters communication, information sharing and problem solving behavior on both sides, but also lays the fundamental basis for the employee representation and the management to strike deals, i.e. (collective) agreements or 'pacts', which involve short term losses for one party but which lead to long-term mutually beneficial outcomes. Such deals could cover a wide range of topics and issues and include agreements on wages and working conditions. For example, if the economic situation of the firm needs wage cuts or a worsening in working conditions in order to survive an agreement with the employee representation could be signed that this is accepted by the employee side if the employer side returns a favor later. As regards the latter this could be job security or higher wages later after the recovery. The same holds in a situation in which the employer side agrees in a deal that excessively high wages are agreed in return of favors from the employee side. Of course, also unilateral trust would allow that in some situations deals can be struck but mutual trust certainly increases the probability that such deals, agreements which need to be accepted by both sides, are struck efficiently. Thus we hypothesize that mutual trust between the employee representation and the management can be expected to have a robust positive effect on firms' increases in profitability.

In the following analysis we test the above hypotheses on the effects of trust in the employment relationship empirically. Whilst concentrating on trust between the employee representation and the management only might imply that we are not capturing all possible actors on both sides of the employment relationship, we concentrate here on the key actors in the relationship at the firm level.

Data: Source, Sample, and Definitions

In order to assess the effect of trust between the employee and employer side on the increase in profitability of firms, we use data from the *European Company Survey* (ECS) which is provided by Eurofound (2015). The ECS was conducted in 2013 and collects representative company *establishment-level* data, i.e. firm-level data, for companies with 10 or more employees. The survey is based on interviews with senior managers and employee representatives in all EU member states.

The ECS collects data on employment relations and Human Resource Management (HRM) issues including for example firm and organizational characteristics (e.g. organizational structure and development of the firm, etc.); employee and work characteristics (e.g. age structure of employees, autonomy of employees, vocational training, etc.); collective bargaining and employee representation. The ECS also asks for information on the firm's financial performance and includes the question 'Since the beginning of 2010 [in the past 3 years], has the financial situation of this establishment …'. Senior managers were asked to answer on the basis of the following categories: 'Improved', 'Remained about the same', 'Worsened', 'Don't know', 'No answer'. In the following analysis we will use the answer 'Increased' to this question as the basis for our dependent variable *increase in firm profitability*. Using 'increase in profitability' as well as this specific conceptualization as a perceived measure to assess the hypothesized beneficial effects of mutual trust between the employee representation and the management is certainly limited as it does not consider the wide spectrum of beneficial effects mutual trust may have on firm outcomes. Nevertheless it is a frequently used indicator in analyses of the effects of trust (e.g., Brown et al. 2015, Bryson 2001, Guest et al. 2008) and therefore allows us to link and compare our results with other academic literature. Against the background that in the former analyses also other measures of the performance of trust are used which are usually confirming each other, the focus on the particular measure in this study can be considered to be a valid and reliable indicator for the performance of a firm but, of course, the use of alternative measures would be beneficial but is not possible because of availability of data. Furthermore, the measure is, to a certain degree, subjective and potentially biased since it is based on a perception. However, as evidence from studies on similar measures of firm performance show (e.g., Forth and McNabb 2008, Wall et al. 2004) this measure is certainly valid as an indicator of the increase in firm profitability and performance in general. Furthermore, the design of the ECS targeted the senior management within firms who can be expected to have not only extensive but also detailed knowledge about the financial situation of the firm. The fact that the general financial situation is asked and considered in the study might be even preferable compared to other operationalization of firm performance or profitability. This is, because data on the financial situation from balance sheet or similar sources might be biased by (short-)term accounting practices which affect the profitability.

Very importantly for this study, besides the collection of data on firm characteristics and profitability, the ECS also collects unique data on trust between employee representatives and managers by asking the two sides ‘Please tell me - based on your experiences with the [employee representation/management] at this establishment - whether you agree or disagree? […] The [employee representation/management] can be trusted’. Both sides were given the following answer categories: ‘Strongly agree’, ‘Agree’, ‘Disagree’, ‘Strongly disagree’, ‘Don’t know’, ‘No answer’. This means that the answer categories are based on analogous categorizations in literature and therefore allow for a differentiation between varying degrees of trust between the two sides (e.g., Brown et al. 2015).

On the basis of the answer categories we will refer to *strong trust* in the other side if the answer ‘Strongly agree’ was given and to *some trust* if the answer ‘Agree’ was given. In a similar vein, if the answer ‘Strongly disagree’ was given, we will refer to *strong distrust* and to *distrust* for the answer ‘Disagree’. In the following analysis we will focus on strong trust and some trust and will only investigate the effect of (strong) distrust as an additional aspect. Although a close look at distrust in our analysis might reveal some interesting results, the reason for not looking at distrust in much detail but rather as an interesting side aspect is based not only on availability of space but also empirical considerations as distrust is relatively rare. Only in 15% of all establishments the employee representation distrusts and only 3% strongly distrust the management. Vice versa, only 8% of mangers showed distrust in the employee representation and even fewer, i.e. 1%, showed strong distrust. Finally, we will use the term *mutual trust* if there is a match in trust by the two sides, i.e. if side A trusts side B and side B also trusts side A. Given that we differentiate between some and strong trust we also differentiate in our terminology accordingly between *some* and *strong mutual trust*. This means that we define strong mutual trust if both sides answered that they strongly agreed on the trust question above and we define some mutual trust if the answer was either strong or some trust.

More specifically, while strong trust is defined if we have a match in ‘strongly agree’, some trust is defined by either ‘agree/agree’ or by combinations of ‘strongly agree/agree’. While a trust relationship which is based on matches of ‘agree’ only are certainly the weakest form of mutual trust, combinations of ‘strongly agree/agree’ could be considered as slightly stronger forms of mutual trust. Against the background that our analyses showed that the differentiation is relevant for the results of the paper we concentrate in the following on the definitions of some and strong trust as outlined earlier.

Apart from the fact that one principle advantage of the ECS is that it allows us to match trust between the employee representation and the management and therefore to analyze the effect of mutual trust on the basis of observations in a large number of firms, it also allows us to do this for and across different countries. However, on the one hand, one disadvantage of the ECS data is that it does not allow us to investigate and analyze the mechanisms and processes behind trust building processes. For example we are not able to investigate how mutual trust is generated or built in the relationship and how it can be lost. In our analysis we only investigate the effect if (mutual) trust is expressed by the management and the employee representation and what the consequences are. But, on the other hand, a main advantage of the ECS is that it permits us to consider (and compare) differences in the degree of trust which are due to disparities in the socio-economic environments in which firms are embedded in different countries. Against the background that trust might depend upon different contextual factors in different countries the availability of data which is comparable cross-nationally is a major advantage of the study. Thus, the data of the ECS allows us to generalize results beyond single countries as cross-national comparability was of the highest order in the design methodology of the ECS (Eurofound, 2015). For example the questions in the ECS questionnaire were translated into the native language of employee representatives and managers and much attention given to consistency in the conceptualizations of the terminology used, which is important for many of the concepts and terms used in the survey, not least for trust.

The overall sample size of the ECS with firms in which an employee representation exists is 6,548 with individual country samples between 40 (Malta) and 556 (Finland). See Table 1 for the number of firms (*N*) per country. As we analyze mutual trust between the employee representation and the management, we exclude firms without employee representation. The share of firms in which employee representation exists differs across countries, with countries such as in particular Austria, Germany and Finland having a higher share and countries such as in particular Poland and the UK having a lower share. However, for all countries the sample size is sufficiently large and comprehensive to allow us not only an estimation of multivariate regression models and specifications which are rich in terms of determinants that can be considered and potential confounders that can be controlled for, but also allows us a comparison between countries.

Modelling strategy: the role of contextual factors and reverse causality concerns

Against the background that mutual trust in the employment relationship, which is our focal independent variable, is just one potential determinant for an increase in the profitability of firms among others, we will control for and consider a number of determinants of firms' performance in our model. We derive the determinants from related literature (e.g., Brown et al 2015, Bryson 2001, Forth and McNabb 2008) and group the determinants into six categories of control variables. In the following we outline the idea for the inclusion of all these variables for the models we estimate. Further details on the operationalization of all variables can be found as a note in Table 2.

The first category of control variables considers the wider *industrial relations system* in which the employee representation and the management are embedded and includes control variables for the structure of *collective wage bargaining*: a dummy variable is included if the firm falls under a collective agreement which was struck either at the *firm* or *higher* (i.e. sector, national) *level* and whether a differentiation in collective wage bargaining is made between different *occupational groups*. The reason for controlling for differences in the structure of collective wage bargaining not only allows us to consider differences in the effect of different collective bargaining structures on the performance of firms (e.g., Flanagan, 1999), but also allows us to control for differences in the role of the employee representation. This means that if collective bargaining takes place outside the firm, i.e. at a higher level, the relevance and role of the employee representation at firm level is different as much of the employment relationship (e.g. wages) is regulated outside. In addition, as another control for the industrial relations system, we control for membership of the firm in an *employer organization* in order to control for if the firm has at least some degree of influence in collective wage bargaining (e.g., Traxler et al. 2007). Finally, as regards the industrial relations system, we include two dummy variables which control for differences in the *type of* the *employee representation*. The first dummy variable captures any different effect on the increase in the profitability in case the employee representation is vested with legally defined rights and obligations such as in particular *works council* enjoy in some countries. The second captures any differences in the effect in case the employee representation is formed by trade union representatives, i.e. *shop stewards*. However, as will be explained below, the latter two variables do not enter all models as these variables refer to country characteristics which conflict with the inclusion of country fixed effects which we argue are important controls in our analysis.

The second category of control variables refers to the *financial situation of the firm*, which we include in our models in order to capture and control for any potential effect because of endogeneity, i.e. reverse causality, concerns. The latter concerns arise because it is possible that not only trust between the employee representation and the management influences the profitability of firms, but also that the profitability of the firm might influence trust of or between the two sides. Even though the argument behind reverse causality is certainly valid, its impact for our analysis and in particular for the reliability of our results, are minor.

The reason why our analysis is less affected by reverse causality problems is that literature clearly points towards the fact that trust between actors in organizations is usually based on a longer-lasting trust building process, on longer-term contextual factors and is less influenced by short time developments (e.g., Guest et al. 2008, Laplante and Harrisson 2008). In other words, trust relationships are usually not something that come and go quickly. Thus the incidence of trust, especially of strong mutual trust, is rather based on various other factors than a recent development. The literature not only refers to a number of factors that are important to explain trust in organizations, but also emphasizes that non-financial aspects including in particular inter personal and socioeconomic factors appear to be more decisive (e.g., Bjørnskov 2007, Chuah et al. 2016, Crouch 1993, Fehr et al. 2003, Fox 1974, Hardin 2002, Uslaner 2002). Thus we can further expect that the relationship between the change in the financial situation and the incidence of mutual trust is rather weak and confined anyway.

Nevertheless the financial situation for the firm is a factor which needs to be considered in our analysis. We therefore include a set of dummy variables that capture whether the financial situation of the firm is: ‘Very good’, ‘Good’, ‘Neither good nor bad’, ‘Bad’, or ‘Very bad’. However, even though the financial situation of the firm potentially affects the trust relationship between the employee representation and the management, it must be underlined that this is just one factor of many.

The role of the financial situation and some stylized facts

To investigate the relationship between the financial situation and mutual trust further we take a look at Table 1 which shows the incidence of strong and some mutual trust between the employee representation and the management along the above categories of the financial situation of the firms for all countries in our sample and for groups of countries.

- Table 1 about here -

Apart from the fact that Table 1 clearly shows that the incidence of strong mutual trust is far lower than some mutual trust in all countries, it also shows that the relationship between the financial situation of firms and the incidence of mutual trust is rather complex and non-linear. On the one hand there are some countries (e.g. Czech Republic, Germany, Poland) in which there is a tendency of higher mutual trust if the financial situation of the firm is good or very good compared to bad or very bad. For example in Germany there is strong mutual trust between the employee and employer side in 10% of firms which are in a very good situation, in 7% of firms which are in a good situation, and in 4% which are in a situation that is neither good nor bad. Thus there is a decline in the incidence of strong mutual trust along a worsening financial situation. This trend seems to be augmented by the 0% incidence of strong mutual trust in firms which are in a very bad situation. However, this trend is disrupted by the 10% incidence of strong mutual trust for firms which are in a bad financial situation. A similar declining trend can be observed for some mutual trust in Germany but again with a significant outlier, as the incidence of some mutual trust peaks in companies with a good financial situation and is lower in companies with a very good situation. However, this pattern in Germany seems to be characteristic for many other countries also, as a decline in incidence along a worsening performance is linear and monotonic in hardly any country.

Moreover, in some countries the incidence of strong (e.g. Denmark and Sweden) and some mutual trust (e.g. Netherlands, Hungary, and the UK) is even higher in firms which are in a very bad situation and thus contradicts the argument that trust is high if the financial situation is good. Without exploring the reasons for the latter result in more detail, this result strongly suggests that the incidence of trust depends very much on a variety of organizational and interpersonal as well as country factors rather than on the idea that the better the performance of the company, the higher the trust. Nevertheless, by looking at the total median over all countries, Table 1 shows that there is a trend of a decreasing incidence of mutual trust along a worsening financial situation of the firm, but this trend is certainly not strong and clear but rather complex and heterogeneous across countries.

In fact, the figures in Table 1 suggest there are significant differences between countries in the level of both strong and some mutual trust. There are countries in which mutual trust between the employee and the employer side is generally high (e.g. in Latvia, Romania, Sweden) and in others it is generally low (e.g. in Bulgaria, Cyprus, Greece). Most notably in Cyprus there is not one single company in which the employment relationship is characterized by strong mutual trust and this is regardless of whether the financial situation of the firm is good or bad. In fact, the figures in Table 1 suggest that the levels of mutual trust in the countries strongly reflects industrial relations regime characteristics of low trust and a conflictual employment relationship (e.g., European Commission, 2009). For example in Liberal and Mediterranean countries, the employment relationship is often described as conflictual and actors have less trust in each other compared to Nordic countries in which the employment relationship is usually described as more harmonious with actors having more trust in each other (e.g., Ilsøe 2010). Without being able to discuss regime differences in more details here, the results in Table 1 appear to support previous characterizations of employment relations regimes (e.g., Brandl 2019). In addition to that, the results on the country differences also reflect similar differences in level and relationship of generalized trust and macroeconomic performance. More specifically, the results presented in Table 1 are largely in line with confidence and trust in institutions and organizations in general in different countries as recently argued and shown by Leibrecht and Pitlik (2020).

However, the upshot of the above considerations regarding the potential problem of reverse causality for our analysis is that there are three reasons why we think that our results are hardly affected: (i) as Table 1 shows, any effect on the incidence of mutual trust potentially caused by the profitability of firms is weak, if it generally exists at all, and our data suggests that the incidence of mutual trust appears to be largely determined by other factors including idiosyncratic country and industrial relations regime factors; (ii) as the incidence of mutual trust in the employment relationship is more likely dependent on the overall (financial) situation of the company and contextual factors than on the short term profitability which is our dependent variable; and (iii) as we control for the potential effect of firms' financial situation by the inclusion of control variables.

The role of firm and contextual factors

In order to proceed with the modelling strategy, the third category of variables we consider in our models controls for *firm and organizational characteristics,* which are mentioned in the literature as relevant and are usually considered in similar analyses (e.g., Brown et al. 2015). These variables include (i) the *type of the establishment*, i.e. whether the firm is a single establishment site or not, in order to control for how much autonomy the firm has and also if the firm's performance is dependent on other subsidiaries or not; (ii) *product development*, i.e. whether design and/or development of new products or services takes place or not in the firm, in order to control for the leeway the firm has to adjust its goods and services to changing (e.g. local) market conditions. We also control for a number of other changes in the firm's circumstances over the past three years in order to capture any effects on the development of profitability including: (iii) a *change of ownership*, i.e. whether there was a change in ownership or not; (iv) a *change of products or services,* i.e. whether there was a significant change in the goods the firm produces and provides or not; (v) a *change in the marketing strategy* or not; and (vi) a significant *change in the organizational structure* or not. We also control for a change in the number of employees at the firm by including a dummy variable in case there was a *decrease in employment* and include dummy variables for the development of *labor productivity*, all factors which might potentially explain developments in the firm's profitability.

The fourth category of variables controls for a number of employee and work characteristics at the firm and includes: the average age of employees, i.e. *age structure*; the average share of employees with open ended *contracts*, and the average share of employees who receive *job training*. Furthermore we control for if *internal learning* takes place, i.e. if the firm's employees actively document and record examples of good work practices, or not, if *job rotation* is a common practice in the firm or not, as well as whether *employees* and *teams* in the firm enjoy a high degree of *autonomy* or not. Although some of these factors are dependent on particular firm and organizational characteristics as well as some sectoral characteristics which will be discussed below, the inclusion of these control variables aims to capture as many factors as possible of firms' employees which might potentially explain differences in the incidence of mutual trust and influence the profitability of the firm.

The fifth category of variables controls for any *sector* specific differences in which firms are embedded by considering dummies for the following sectors: *construction*; *commerce and hospitality*; *transport and communication*; *financial services and real estate*; *other services*; and *industry* which will be used as a reference category in the analysis. In addition, we control for whether the firm is privately or *public*ly owned. We control for different sectors because sectoral differences potentially imply differences in the role and relevance of employee representation (e.g. the form of employee representation in firms in the industry often has a longer history and therefore its efficacy is potentially different from other sectors), but also because of various economic differences between sectors (e.g. some sectors are more exposed to global developments than others, etc.) which potentially affect the development of the firm's profitability and trust (e.g., Bechter et al. 2012).

Last but not least, we control for differences between *countries* by considering a full set of country dummies as our sixth category of control variables in order to capture any idiosyncratic country variations within our sample. We expect that the development in firms' profitability can be influenced not only by country differences but also that the role of employee representation within firms is different in different countries. Furthermore we expect that the incidence of mutual trust between the employee and employer side is also influenced by country characteristics as well as the level of generalized trust (e.g., Bjørnskov 2007, Buckley and Casson 2001, Chuah et al. 2016, Crouch 1993, Fox 1974, Hardin 2002, Leibrecht and Pitlik 2020; Uslaner 2002).

Estimation and empirical results

We test a number of specifications based upon the above considerations in the modelling strategy and the factors which need to be considered in order to extract the role and contribution of mutual trust for increases in firms' profitability. We start our analysis by using strong mutual trust as our main variable of interest. In model (a), which will be our preferred model, we include all the above categories of variables with the exception of the type of employee representation. The reasons for this exclusion are twofold: first, the type (e.g. whether the employee representation is mandatory and equipped with legal rights and obligations) is a country feature and conflicts with the consideration of country fixed effects which we argued are important in order to be able to control for idiosyncratic country characteristics. Second, the variable contains many missing values which cause a substantial decrease in the number of observations. Thus, the non-consideration of the type of the employee representation in our preferred model is mainly based on empirical considerations. Nevertheless, as the type of employee representation is certainly interesting and potentially important in any analysis on the role of strong mutual trust, we test its role in model (b) instead of country dummies.

Both models (a) and (b) consider a comprehensive set of (control) variables and, as mentioned earlier, the rationale behind the choice of this set of variables is so that factors mentioned in the academic literature as relevant as well as potential confounders can be considered adequately. The set of available variables for the analysis is, of course, bound to the availability of variables and the conceptualizations applied in the ECS. Even though our preferred model (a) reflects a reasonable, necessary and balanced number of factors which we control for, we also tested more comprehensive as well as more parsimonious models. The tests of different models confirm the robustness of the results of our preferred model (a) with respect to the effect of strong mutual trust. As examples of two more parsimonious models we present one model, i.e. model (c) which is analogous to (a) but does not include sector dummies since sector characteristics partially coincide with firm and organizational characteristics, employee and work characteristics as well as industrial relations system characteristics (e.g., Bechter et al. 2012). Without presenting the full spectrum of more parsimonious models possible and tested, we present model (d), which is at the bottom end of the spectrum of possible models, as it only consists of a constant and our main variable of interest, i.e. strong mutual trust.

In models (a) to (d) we analyze the effect of strong mutual trust between the employee representation and the management which we hypothesize to be decisive. However, as some literature suggests that trust between actors in organizations per se can be associated with beneficial effects (e.g. Fukuyama, 1996) we also investigate in our analysis if weaker forms of mutual trust between the employee representation and the management, as well as unilateral trust, might have a positive effect on the development of firms' profitability.

Therefore we test in model (e) the effect of mutual trust, i.e. of some and strong mutual trust. However, from a methodological perspective, some trust in the other side might reflect and capture answers which were influenced by social desirable answers. Therefore some trust might be biased and therefore has to be interpreted carefully and only as a (very) weak form of trust. In fact the positive effect of mutual trust might be mitigated and blurred by its some mutual trust component, which might only be a reflection of a 'good' or 'normal' working relationship, and therefore we expect the effect will not be strong.

We argued that, for the efficacy of the employment relationship, strong mutual trust is most relevant and unilateral trust by one side in the other might not necessarily materialize into developments in firms' profitability. Therefore we analyze in (f) the effect of strong trust in management by using the same specification as in (a) and in (g) in order to test the robustness using the same specification as in (b), i.e. with consideration of the type of employee representation (but without country fixed effects). In models (h) and (i) we apply the same strategy, but investigate the effect of strong trust in the employee representation. In order to complement the tests for unilateral trust, by using the same set of control variables as in our preferred model (a), we also investigate, in model (j) for trust in management and in model (k) for trust in the employee representation, if weaker forms of trust have an effect on firms' increases in profitability.

However, mutual trust and some unilateral trust can be interpreted as indicators of a 'good' and 'normal' working relationship, neither of which is characterized by (serious) conflicts and is therefore, at the least, distinct to distrust which we test in models (l) for strong distrust and (m) for mutual distrust, i.e. for the combination of strong and some distrust. Given the background that there is a lack of academic literature on the effects of distrust which we assume to be rather complex and not simple and from a sense that a negative effect might be expected, we do not form any hypotheses but investigate the effect of mutual distrust from an explorative angle.

As our main variables of interest, as well as most of our control variables, are dummy variables, we estimate a linear probability model, even though our outcome is binary. However, given that the data of the ECS on the development of firms' profitability enables us to consider also the categories 'stable' and 'decreased' and that there is a potential bias towards responding above categories (e.g., Wall et al. 2004) we also considered an ordered probit estimation. This test confirms not only the results shown in the following but also provides further evidence that the ordinal properties are not biased by this kind of question and answer categories on the performance of firms (e.g., Bryson et al. 2005).

As mentioned earlier, the share of firms with employee representation relative to the total number of firms in the country, as well as compared to the representative country sample of the ECS, is different across the EU member states. Therefore, we investigated any differences in the results by analyzing the robustness of our preferred model (a) on different subgroups of countries (groups with high and low shares of employee representation in firms). In addition, we also considered if the results are influenced by the inclusion/exclusion of one or the other country so that we dropped each country one by one and estimated the preferred model (a) on each sample. Even though we observed in these tests differences in the magnitude of the effect of strong mutual trust on firms' increases in profitability across different subsamples, the tests confirm the robustness of the results shown in Table 2 for models (a) to (d) and in Table 3 for models (e) to (m).

- Table 2 about here -

As can be seen in Table 2, we find a positive and significant effect from our main variable of interest, i.e. strong mutual trust between the employee representation and the management, on the increase in the profitability of firms. The significant estimate of strong mutual trust is not only observable in our preferred model (a) but in all other models as well which indicates that the effect is also robust as the models differ substantially in their structure. The magnitude of the effect is dependent on the model however which is lower in the models without the inclusion of country fixed effects, i.e. models (b) and (d), which in turn supports the significance of country factors in our analysis.

With respect to the relevance of the control variables, we find that the wider industrial relations system, including the level at which collective bargaining takes place, does not affect the increase in the profitability of firms. We find only that if employee representation is characterized by trade union involvement, i.e. shop stewards, the likelihood that the profitability of firms' increases is higher compared to non-union involvement. The latter result is difficult to generalize as the sample size of specification (b) is relatively low. However, we do find that the financial situation of the firm matters for the development of its profitability. The results are intuitively reasonable and indicate that firms which are in a (very) good financial situation are more likely to experience an increase in their profitability than vice versa. However, only a few firm and organizational characteristics, employee and work characteristics as well as sectoral factors, appear to influence increases in firm profitability. Only changes in ownership and increases in labor productivity seem to be robust determinants of profitability increases, while decreases in the number of employees in firms seems to be negatively associated with increases in profitability. These results are also robust and confirmed in models which consider sector effects (a and b) and without (c).

- Table 3 about here -

As regards the effect of mutual trust (e) as well as strong and some unilateral trust in the other side, in models (f) to (i), the results in Table 3 suggest that there is no robust effect from weaker forms of mutual trust as well as from strong (and weak) forms of unilateral trust in the other side of the employment relationship. For all forms of weak trust, i.e. for mutual trust in (e) and for trust in management in (j) and trust in the employee representation in (k), we find no significant estimate. This result for weaker forms of trust is robust for other specifications and tests which are not shown. However, for strong unilateral trust, we find that, dependent upon the model and sample, some evidences for an effect of strong unilateral trust which is expressed by variations for strong trust in management between models (f) and (g) and for strong trust in the employee representation in models (h) and (i). Given the background that there is no clear evidence on a systematic pattern in the models regarding the conditions on when and why unilateral trust matters, we consider the effect of unilateral trust as not robust and thus as generalizable.

The fact that mutual trust as well as unilateral trust in both directions is not significant confirms our expectation that trust and mutual trust (i.e. weaker forms of trust) reflect rather a ‘normal’ employment relationship that is characterized neither by (strong) conflict nor (great) harmony and thus has a neutral effect. This expectation might be different for an employee relationship which is characterized by some and strong mutual distrust but as our estimations results show in models (l) and (m), cannot be confirmed as the coefficients for some and strong mutual distrust are not significant. Without being able to discuss this result for mutual distrust in greater detail, we draw the conclusion that distrust between the employee and employer side in companies is at least not harmful.

However, the upshot of all the analyses is that our hypotheses are confirmed and it is only strong mutual trust that is able to robustly affect firms' increases in profitability. Also, even though the effect of unilateral trust is positive in some specifications and therefore there is some support that unilateral trust might also enhance the profitability of firms, this effect needs to be interpreted and treated with caution.

Conclusions

The academic literature has provided limited information on the question of trust in the employment relationship, i.e. between the employee and employer side, in firms and whether a trustful employment relationship can be an asset or at least a strategic advantage for firms in the sense that it materializes in a positive financial performance. Against this background, in this article we investigated the effect of different forms of trust relationships, i.e. unidirectional trust in the employee representation and in the management as well as mutual trust, on the firms' financial performance, i.e. on increases in the profitability of firms.

In contrast to some strands in the literature which attribute to trust beneficial effects on the functioning, efficacy and performance of organizations, including firms, *per se*, we have taken a more critical position and argued that the effect of trust in the employment relationship on the firms' financial performance, i.e. profitability, is conditioned on the incidence of mutual trust. We argued that only mutual trust enables the two sides in the employment relationship to bargain and strike deals which involve short term losses for one side but which lead to long-term mutually beneficial outcomes including increases in firms' profitability. We further argued that even though unilateral trust from either one side in the other might be beneficial in principle, it is not necessarily sufficient to produce systematic performance gains.

We tested our argument on the basis of a unique and representative matched employee/employer side data set which covers trust relationships between the employee representation and the management in 6,548 firms from all member states of the EU. The results of our analysis confirmed our hypothesis and showed that only strong mutual trust affects firms' increases in profitability positively. Weaker forms of trust, unilateral trust as well as distrust, do not generally substantiate any performance gains for firms. More specifically, as regards unilateral trust there is some evidence that depending upon contextual factors strong unilateral trust might result in performance gains. However, we also found that distrust does not affect firm performance adversely either. The latter might even be interpreted as positive.

Thus, only the incidence of strong mutual trust between the employee and employer side in firms constitutes a general asset or advantage for firms but, as also shown in our analysis, is rare in firms throughout Europe. Independent of the incidence of trust in European firms our results show that it is in the mutual interest of both sides in the employment relationship to develop a trustful relationship and it generally pays off for both sides if mutual trust is built up. Given that trust and trust building is not something given to firms and actors but is rather a social construction that develops through manifold and potentially complex interactions by both sides, further research efforts on the determinants of trust is certainly important. However, the rare incidence of strong mutual trust indicates that this development of mutual trust within the employment relationship is not only difficult but also fragile and once established is a delicate asset which might be lost much more quickly than it was gained.

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Table 1: The financial situation of the firm and the incidence (in percentage) of strong and some mutual trust

	N	Strong mutual trust						Some mutual trust					
		Total	Very good	Good	Neither good nor bad	Bad	Very bad	Total	Very good	Good	Neither good nor bad	Bad	Very bad
Continental													
Austria	307	1	2	0	0	0	0	82	88	78	84	80	50
Belgium	318	3	3	5	0	0	0	67	70	76	65	57	75
Germany	249	8	10	7	4	10	0	65	80	98	62	40	0
Luxembourg	182	2	0	2	4	0	0	73	71	79	67	100	0
Netherlands	371	1	3	1	2	0	0	81	84	85	77	73	100
Slovenia	213	4	12	3	2	4	20	75	71	82	71	69	80
Median		3	3	3	2	0	0	74	76	80	69	71	63
CEEC													
Bulgaria	94	1	0	3	0	0	-	84	100	87	79	67	-
Czech Republic	168	6	11	5	0	0	-	79	70	126	83	80	-
Estonia	123	25	20	22	29	40	0	59	60	98	7	40	100
Hungary	249	6	11	6	10	0	0	74	56	81	81	78	100
Latvia	55	31	0	29	45	25	-	55	100	58	40	75	-
Lithuania	142	20	64	17	13	15	0	72	36	77	80	69	100
Poland	485	2	10	1	2	0	0	52	60	60	53	26	40
Romania	220	25	19	25	38	0	0	70	76	73	50	86	100
Slovakia	151	20	23	23	13	21	0	72	69	73	74	57	100
Median		20	11	17	13	0	0	72	69	77	74	69	100
Nordic													
Denmark	477	9	12	7	12	0	20	77	79	79	76	72	60
Finland	556	5	7	5	4	4	0	69	74	70	70	62	50
Sweden	517	11	15	12	11	4	18	70	66	72	70	70	73
Median		9	12	7	11	4	18	70	74	72	70	70	60
Mediterranean													
France	357	8	7	10	4	7	0	61	70	67	55	66	33
Greece	119	3	0	8	3	0	0	63	79	74	61	53	20
Italy	286	3	0	3	6	4	0	65	54	80	61	58	17
Portugal	97	6	14	9	6	0	0	60	71	66	68	38	0
Spain	416	0	0	1	0	0	0	57	63	65	59	52	36
Median		3	0	8	4	0	0	61	70	67	61	53	20
Liberal													
Cyprus	136	0	0	0	0	0	0	63	73	74	61	57	40
Ireland	83	11	14	12	4	29	0	59	64	64	63	43	0
Malta	40	18	29	10	15	0	100	55	57	80	54	33	0
United Kingdom	137	8	6	10	9	9	0	53	65	55	50	45	100
Median		10	10	10	7	5	0	57	65	69	57	44	20
Median Total		6	10	7	4	0	0	67	70	76	65	62	50

Note: *N* = number of observations. Numbers show the incidence (in percentages) of strong and some trust along differences in the financial situation in which firms are for all countries in the sample. The categorisation of the financial situation of the firm is based on the answers (in categories: 'Very good', 'Good', 'Neither good nor bad', 'Bad', 'Very bad') to question to the management in the ECS: 'How would you rate the financial situation of this establishment?'. Grouping of countries is based on employment relations regimes according to European Commission (2009).

Table 2. The determinants of increases in the profitability of firms and the role of strong mutual trust

	(a)	(b)	(c)	(d)
Constant	0.1355	-0.0214	0.1182	0.3111**
	(0.0848)	(0.1030)	(0.0841)	(0.0062)
Strong mutual trust	0.0540*	0.0829*	0.0550*	0.0945**
	(0.0269)	(0.0347)	(0.0268)	(0.0233)
Industrial relations system				
Collective wage bargaining[1]				
Establishment level	-0.0098	0.0211	-0.0091	-
	(0.0146)	(0.0177)	(0.0145)	
Higher level	-0.0069	0.0001	-0.0046	-
	(0.0160)	(0.0184)	(0.0159)	
Occupational groups	0.0227	0.0258	0.0211	-
	(0.0166)	(0.0210)	(0.0164)	
Employer organization	0.0117	0.0138	0.0175	-
	(0.0161)	(0.0181)	(0.0158)	
Type of employee representation[2]				
Works council	-	-0.0140	-	-
		(0.0174)		
Shop stewards	-	0.0559**	-	-
		(0.0195)		
Financial situation of firm[3]				
Very good	0.3159**	0.3421**	0.3177**	-
	(0.0230)	(0.0298)	(0.0229)	
Good	0.1574**	0.1414**	0.1622**	-
	(0.0163)	(0.0196)	(0.0162)	
Bad	-0.0809**	-0.0777*	-0.0816**	-
	(0.0266)	(0.0311)	(0.0266)	
Very bad	-0.1599**	-0.1320	-0.1607**	-
	(0.0568)	(0.0685)	(0.0564)	
Firm and organisational characteristics				
Type of establishment[4]	-0.0098	0.0027	-0.0122	-
	(0.0097)	(0.0115)	(0.0096)	
Product development[5]	-0.0154	-0.0246	-0.0160	-
	(0.0151)	(0.0184)	(0.0147)	
Change ownership[6]	0.0699**	0.0991**	0.0698**	-
	(0.0207)	(0.0261)	(0.0206)	
Change of products or services[6]	0.0129	0.0089	0.0129	-
	(0.0151)	(0.0189)	(0.0150)	
Change in marketing strategy[6]	0.0274	0.0338	0.0266	-
	(0.0152)	(0.0193)	(0.0151)	
Change in organizational structure[6]	-0.0147	0.0053	-0.0166	-
	(0.0169)	(0.0216)	(0.0168)	
Decrease employment[6]	-0.0386*	-0.0379*	-0.0373*	-
	(0.0154)	(0.0186)	(0.0154)	
Labor productivity[7]				
Increased	0.2510**	0.2391**	0.2538**	-
	(0.0150)	(0.0184)	(0.0149)	
Decreased	0.0197	-0.0158	0.0264	-
	(0.0236)	(0.0283)	(0.0235)	
Employee and work characteristics				
Age structure[8]	-0.0087	-0.0043	-0.0103	-
	(0.0075)	(0.0092)	(0.0073)	
Contracts[8]	0.0010	-0.0051	0.0010	-
	(0.0056)	(0.0065)	(0.0056)	
Job training[8]	0.0028	0.0037	0.0018	-
	(0.0037)	(0.0041)	(0.0036)	
Internal learning[9]	0.0091	0.0345	0.0053	-
	(0.0152)	(0.0185)	(0.0152)	
Job rotation[10]	-0.0091	-0.0020	-0.0124	-
	(0.0083)	(0.0104)	(0.0083)	
Employee autonomy[11]	-0.0153	0.0098	-0.0133	-
	(0.0120)	(0.0147)	(0.0120)	
Team autonomy[11]	0.0132	0.0006	0.0174	-
	(0.0156)	(0.0188)	(0.0155)	
Sector[12]				
Construction	-0.0061	-0.0105	-	-
	(0.0273)	(0.0344)		
Commerce and hospitality	-0.0207	-0.0048	-	-
	(0.0202)	(0.0246)		

Transport and communication	-0.0137	-0.0355	-	-
	(0.0292)	(0.0359)		
Financial services and real estate	-0.0444	-0.0448	-	-
	(0.0294)	(0.0396)		
Other services	-0.0508**	-0.0519*	-	-
	(0.0188)	(0.0231)		
Public	-0.0411*	-0.0108	-	-
	(0.0206)	(0.0251)		
Country fixed effects	Yes	No	Yes	No
N	4077	2562	4123	6108
R-squared	0.2076	0.1959	0.2039	0.0027
Adjusted *R*-squared	0.1964	0.1854	0.1939	0.0025

Notes: [1] Reference category is no collective agreement. [2] Works council refer to an employee representation with legally defined rights and obligations and shop stewards to a trade union employee representation. [3] Reference category is 'Neither good nor bad'. [4] Differentiation between single establishment companies (=1) or headquarters or subsidiary sites. [5] If the design or development of new products or services is carried out at the establishment. [6] All changes refer to significant (perceived by the management) changes and developments in the past three years. [7] Reference category is 'Remained the same'. [8] Percentage of employees are older than 50 years of age; with open ended contracts; and receive job training. [9] If employees document and keep records of their good work practices or lessons learned, with the purpose to share these with other employees. [10] If job rotation is a common practice. [11] If employees/teams have large autonomy in the planning and execution of daily work tasks. Based on NACE Rev. 2 classification of sectors. Reference category is 'Industry'. Public sector firms are defined by an ownership share of more than 50%. *Estimation*: Average marginal effects, robust standard errors in parentheses. *Statistically significant at the 5% level; ** at the 1% level. *Data source*: Eurofound (2015).

Table 3: The determinants of increases in the profitability of firms and the role of some mutual trust and distrust

	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
Constant	0.1405	0.1261	-0.0315	0.2156**	0.0778	0.1268	0.2335**	0.1353	0.1357
	(0.0858)	(0.0834)	(0.1008)	(0.0612)	(0.0736)	(0.0846)	(0.0632)	(0.0854)	(0.0849)
Mutual trust	-0.0047	-	-	-	-	-	-	-	-
	(0.0164)								
Strong trust in management	-	0.0358*	0.0357	-		-	-	-	-
		(0.0170)	(0.0202)						
Strong trust in employee representation	-	-	-	-0.0116	0.0296*	-	-	-	-
				(0.0117)	(0.0145)				
Trust in management	-	-	-	-	-	0.0060	-	-	-
						(0.0176)			
Trust in employee representation	-	-	-	-	-	-	-0.0227	-	-
							(0.0173)		
Strong mutual *dis*trust	-	-	-	-	-	-	-	0.0021	-
								(0.0144)	
Mutual *dis*trust	-	-	-	-	-	-	-	-	0.0176
									(0.0422)
Industrial relations system									
Collective wage bargaining[1]									
Establishment level	-0.0109	-0.0110	0.0160	-0.0023	0.0105	-0.0126	-0.0027	-0.0109	-0.0109
	(0.0146)	(0.0143)	(0.0174)	(0.0105)	(0.0126)	(0.0143)	(0.0105)	(0.0146)	(0.0146)
Higher level	-0.0068	-0.0066	0.0010	0.0075	0.0037	-0.0063	0.0072	-0.0067	-0.0068
	(0.0160)	(0.0157)	(0.0181)	(0.0116)	(0.0128)	(0.0157)	(0.0116)	(0.0160)	(0.0160)
Occupational groups	0.0234	0.0211	0.0225	0.0209*	0.0280*	0.0217	0.0208**	0.0234	0.0235
	(0.0166)	(0.0163)	(0.0207)	(0.0121)	(0.0150)	(0.0163)	(0.0121)	(0.0166)	(0.0166)
Employer organization	0.0110	0.0137	0.0139	0.0008	0.0041	0.0133	0.0012	0.0111	0.0112
	(0.0161)	(0.0158)	(0.0178)	(0.0113)	(0.0127)	(0.0158)	(0.0113)	(0.0161)	(0.0161)
Type of employee representation[2]									
Works council	-	-	-0.0111	-	-0.0158	-	-	-	-
			(0.0171)		(0.0124)				
Shop stewards	-	-	0.0526**	-	0.0286*	-	-	-	-
			(0.0192)		(0.0133)				
Financial situation of firm[3]									
Very good	0.3176**	0.3157**	0.3426**	0.3240**	0.3569**	0.3183**	0.3237**	0.3176**	0.3175**
	(0.0230)	(0.0227)	(0.0294)	(0.0171)	(0.0216)	(0.0227)	(0.0170)	(0.0231)	(0.0230)
Good	0.1583**	0.1570**	0.1447**	0.1483**	0.1427**	0.1589**	0.1490**	0.1581**	0.1581**
	(0.0163)	(0.0161)	(0.0193)	(0.0119)	(0.0140)	(0.0160)	(0.0119)	(0.0163)	(0.0163)
Bad	-0.0818**	-0.0852**	-0.0815**	-0.0542**	-0.0524*	-0.0835**	-0.0548**	-0.0815**	-0.0821**
	(0.0266)	(0.0260)	(0.0303)	(0.0199)	(0.0225)	(0.0260)	(0.0199)	(0.0266)	(0.0266)
Very bad	-0.1592**	-0.1458**	-0.1104	-0.1336**	-0.1212*	-0.1437*	-0.1355**	-0.1585**	-0.1592**
	(0.0569)	(0.0561)	(0.0673)	(0.0451)	(0.0527)	(0.0562)	(0.0452)	(0.0568)	(0.0568)
Firm and organizational characteristics									
Type of establishment[4]	-0.0096	-0.0092	0.0030	-0.0074	0.0003	-0.0093	-0.0075	-0.0095	-0.0096
	(0.0097)	(0.0095)	(0.0112)	(0.0070)	(0.0081)	(0.0095)	(0.0070)	(0.0097)	(0.0097)
Product development[5]	-0.0150	-0.0168	-0.0230	-0.0098	-0.0239	-0.0166	-0.0101	-0.0150	-0.0150
	(0.0151)	(0.0148)	(0.0181)	(0.0108)	(0.0130)	(0.0149)	(0.0108)	(0.0151)	(0.0151)
Change ownership[6]	0.0694**	0.0692**	0.1023**	0.0808**	0.0997**	0.0677**	0.0805**	0.0694**	0.0697**
	(0.0207)	(0.0204)	(0.0258)	(0.0152)	(0.0187)	(0.0204)	(0.0152)	(0.0207)	(0.0207)

Change of products or services[6]	0.0133	0.0085	0.0030	0.0124	0.0113	0.0082	0.0121	0.0133	0.0131
	(0.0151)	(0.0149)	(0.0186)	(0.0110)	(0.0135)	(0.0149)	(0.0110)	(0.0151)	(0.0151)
Change in marketing strategy[6]	0.0276	0.0295*	0.0390*	0.0369**	0.0363**	0.0301*	0.0368**	0.0276	0.0275
	(0.0152)	(0.0150)	(0.0190)	(0.0111)	(0.0137)	(0.0150)	(0.0111)	(0.0152)	(0.0152)
Change in organisational structure[6]	-0.0144	-0.0178	-0.0017	-0.0255*	-0.0114	-0.0183	-0.0254*	-0.0145	-0.0143
	(0.0169)	(0.0167)	(0.0212)	(0.0127)	(0.0158)	(0.0167)	(0.0127)	(0.0169)	(0.0169)
Decrease employment[6]	-0.0392*	-0.0335*	-0.0336	-0.0382**	-0.0443**	-0.0343*	-0.0380**	-0.0391*	-0.0393*
	(0.0154)	(0.0152)	(0.0183)	(0.0115)	(0.0134)	(0.0152)	(0.0115)	(0.0154)	(0.0154)
Labor productivity[7]									
Increased	0.2511**	0.2559**	0.2461**	0.2531**	0.2353**	0.2557**	0.2530**	0.2511**	0.2511**
	(0.0151)	(0.0148)	(0.0181)	(0.0109)	(0.0131)	(0.0148)	(0.0109)	(0.0151)	(0.0151)
Decreased	0.0201	0.0205	-0.0117	0.0007	-0.0307	0.0213	0.0004	0.0199	0.0199
	(0.0237)	(0.0232)	(0.0277)	(0.0171)	(0.0195)	(0.0233)	(0.0171)	(0.0237)	(0.0237)
Employee and work characteristics									
Age structure[8]	-0.0085	-0.0074	-0.0025	-0.0214**	-0.0136*	-0.0075	-0.0216**	-0.0085	-0.0085
	(0.0075)	(0.0074)	(0.0090)	(0.0054)	(0.0064)	(0.0074)	(0.0054)	(0.0075)	(0.0075)
Contracts[8]	0.0009	0.0009	-0.0056	-0.0017	-0.0020	0.0009	-0.0017	0.0009	0.0009
	(0.0056)	(0.0055)	(0.0064)	(0.0039)	(0.0045)	(0.0055)	(0.0039)	(0.0056)	(0.0056)
Job training[8]	0.0029	0.0029	0.0042	0.0006**	0.0002	0.0029	0.0004	0.0030	0.0029
	(0.0037)	(0.0036)	(0.0040)	(0.0026)	(0.0029)	(0.0036)	(0.0026)	(0.0037)	(0.0037)
Internal learning[9]	0.0082	0.0101	0.0340*	0.0106	0.0362**	0.0104	0.0103	0.0083	0.0081
	(0.0152)	(0.0150)	(0.0181)	(0.0111)	(0.0132)	(0.0150)	(0.0111)	(0.0152)	(0.0152)
Job rotation[10]	-0.0087	-0.0067	0.0025	-0.0034	0.0055	-0.0070	-0.0034	-0.0087	-0.0088
	(0.0083)	(0.0082)	(0.0102)	(0.0061)	(0.0073)	(0.0082)	(0.0061)	(0.0083)	(0.0083)
Employee autonomy[11]	-0.0149	-0.0137	0.0125	-0.0146	0.0099	-0.0134	-0.0144	-0.0149	-0.0148
	(0.0120)	(0.0118)	(0.0145)	(0.0088)	(0.0106)	(0.0118)	(0.0088)	(0.0120)	(0.0120)
Team autonomy[11]	0.0124	0.0124	0.0008	-0.0021	-0.0149	0.0117	-0.0020	0.0124	0.0125
	(0.0156)	(0.0154)	(0.0185)	(0.0116)	(0.0138)	(0.0154)	(0.0116)	(0.0156)	(0.0156)
Sector[12]									
Construction	-0.0057	-0.0079	-0.0174	-0.0271	-0.0222	-0.0068	-0.0272	-0.0058	-0.0058
	(0.0273)	(0.0269)	(0.0339)	(0.0196)	(0.0245)	(0.0269)	(0.0196)	(0.0273)	(0.0273)
Commerce and hospitality	-0.0192	-0.0198	-0.0077	-0.0223	-0.0145	-0.0180	-0.0224	-0.0192	-0.0191
	(0.0202)	(0.0199)	(0.0241)	(0.0144)	(0.0172)	(0.0199)	(0.0144)	(0.0203)	(0.0202)
Transport and communication	-0.0135	-0.0114	-0.0318	-0.0154	-0.0375	-0.0105	-0.0164	-0.0134	-0.0136
	(0.0292)	(0.0288)	(0.0354)	(0.0202)	(0.0243)	(0.0288)	(0.0202)	(0.0293)	(0.0292)
Financial services and real estate	-0.0431	-0.0486	-0.0446	-0.0470*	-0.0460	-0.0479	-0.0466*	-0.0434	-0.0429
	(0.0294)	(0.0290)	(0.0392)	(0.0229)	(0.0295)	(0.0290)	(0.0229)	(0.0294)	(0.0294)
Other services	-0.0499**	-0.0492**	-0.0515*	-0.0374**	-0.0386*	-0.0490**	-0.0377**	-0.0500**	-0.0500**
	(0.0188)	(0.0185)	(0.0227)	(0.0136)	(0.0165)	(0.0185)	(0.0136)	(0.0188)	(0.0188)
Public	-0.0424*	-0.0391	-0.0090	-0.0295*	-0.0107	-0.0397	-0.0296	-0.0423*	-0.0422*
	(0.0206)	(0.0203)	(0.0247)	(0.0161)	(0.0197)	(0.0203)	(0.0161)	(0.0206)	(0.0206)
Country fixed effects	Yes	Yes	No	Yes	No	Yes	Yes	Yes	Yes
N	4077	4181	2640	6418	4800	4181	6418	4077	4077
R-squared	0.2068	0.2103	0.1986	0.2192	0.2037	0.2094	0.2193	0.2068	0.2068
Adjusted *R*-squared	0.1956	0.1994	0.1885	0.2132	0.1982	0.1985	0.2133	0.1956	0.1956

Notes: Please see notes in Table 2 for detailed information on variables. *Estimation*: Average marginal effects, robust standard errors in parentheses. *Statistically significant at the 5% level; ** at the 1% level. *Data source*: Eurofound (2015).