Diversity and Social Capital within the Workplace:

Evidence from Britain

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Abstract

This paper uses the British Workplace Employee Relations Survey to investigate the links between gender or ethnic diversity and workers' level of trust in managers or the extent of identity with the values and objectives of the firm – dimensions of what we might call social capital within the workplace. These are both factors that one might expect to make firms more co-operative and, hence, productive. Controlling for plants workforce composition, we find an opposite effect of females and ethnic minorities: a higher female share in the plant is associated with higher trust and identity for both men and women (men much more than women) while a higher minority share is associated with lower trust and identity.

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Introduction

Many societies are becoming more diverse in a number of ways. Immigration has led to greater diversity in ethnicities and religions in many communities. And the entry of women into the workplace and changing gender roles within the household have led the worlds of women and men to intersect more often than they once did.

As diversity has increased so has interest in its effects on societies and communities. Firms might also be affected by increased diversity. Coase (1937) argued that transactions and interactions within firms are not mediated by markets so that interactions between people within firms might be influenced by some of the same factors as the interactions within communities. But the literature on how diversity affects the social capital of firms is much less developed than that on the social capital of communities. However, most of the mechanisms put forward for why diversity might affect trust could also be expected to apply within the workplace – many people spend as much time at work as they do in their communities. So, it is interesting to consider the impact of diversity on trust and identity within the firm.

There are two main hypotheses about the overall impact of diversity on firms. First, that diversity in people leads to diversity in thinking (Cox et al, 1991), and that, handled correctly, this adds value to organizations. On the other hand it is argued that more diversity makes co-operation harder as people find it harder to interact or tend to prefer their in-group to an out-group (see, for example, the review by Williams and O'Reilly, 1998).

In this paper we study how gender and ethnic diversity affect workers' trust of managers and the extent of workers' identity with the values and objectives of the firm. These might be thought of as two dimensions of the 'social capital' of the workplace. Trust and identity or commitment have often been argued to be important determinants of the effectiveness of organisations and a viable alternative to the exercise of power and control by management over workers (e.g Fox, 1974; Walton, 1985). These dimensions of social capital can affect both workers' wellbeing (Helliwell, 2006) and firm economic performance (Brown et al. 2015). There is a large existing literature about both the determinants of trust within organizations (e.g. see Mayer et al, 1995; Whitener et al, 1998; Schoorman et al, 2007) or between organizations (e.g. Ozer etal, 2014, 2017) and how trust in leadership affects organizational performance (e.g. see the review of Burke et al, 2007). There is also a literature on the factors affecting worker commitment to organisations, one of which is the extent to which workers identify with the firm's objectives (e.g. Meyer and Allen, 1991; Meyer, Allen and Smith, 1993).

There is also a large literature that links trust, identity and diversity to the economic and social wellbeing of nations and communities. For example, Knack and Keefer (1997) and Algan and Cahuc (2010) argue that higher trust is associated with higher economic growth and Putnam (2000) argued that trust is associated with higher measures of social capital (though see Uslaner, 2002, for a different view). Putnam (2007) argued that higher diversity is associated with lower trust, a claim that has spawned a large and growing literature (see, for example, Portes and Vickstrom, 2001, Uslaner, 2012, and Tesei, 2014, and Lymperopoulou et al, 2022 for alternative views. And there are a variety of papers arguing that ethnic diversity has undesirable impacts on economic and social outcomes (e.g. Easterly and Levine, 1997; Alesina, Baqir and Easterly, 1999; Alesina and La Ferrara, 2005, or van der Meer and Tolsma, 2014, for a review), impacts that may be mediated by low trust and a failure to establish a common identity.

But there is little literature linking diversity and trust/identity at the firm level and this is the contribution of our paper. As firms control who they hire one might expect that a firm exerts more control over the diversity of its workforce than nations or communities do over their residents (see, for example, Kalev et al 2006, for evidence on the effectiveness of affirmative action and diversity policies)[1]. This implies that diversity is likely to be endogenous to the firm but the existing literature largely ignores this issue[2]. We attempt to partially address endogeneity issues and discuss our results accordingly.

The data we use comes from the UK Workplace Employee Relations Survey (WERS) for 2004 and 2011. We investigate the relationship between gender and ethnic diversity in the workplace and trust of managers or identity with the values of the firm. We find evidence that both women and minorities have higher levels of trust and identity as individuals, interesting findings as both women and minorities are typically found to have lower levels of generalized trust (e.g. Alesina and La Ferrara, 2002). But we also find evidence that a higher female share in the

[1] Though nation-building exercises are one way countries might seek to influence diversity - e.g. Miguel, 2004, on the comparison of Kenya and Tanzania. This is not to say that people do not choose their neighbourhoods based on ethnic composition, just that there is rarely a central authority controlling this process.

[2] Exceptions to this are some lab experiments that use an experimental design use most commonly with student subjects. But, it is not clear that results from these settings can be generalised to real-world work settings especially as the findings are so heterogeneous so seem (at best) dependent on the wider situation being considered. But outside the lab there is very little in the way of experimental or quasi-experimental evidence on the impact of diversity.

plant is associated with higher trust and identity (stronger for trust than identity) and that a higher minority share is associated with lower trust and identity (stronger for identity than trust).

The plan of the paper is as follows. In the next section we briefly survey the literature on the impact of diversity in the workplace on outcomes. The second section then describes the data that we use and the third section our empirical methodology. The fourth section presents results and the final section concludes.

1. The Literature on Diversity and the Workplace

In this paper we focus on gender and ethnic diversity but diversity in the workplace can take many forms and other studies have considered age diversity (Backes-Gellner and Veen, 2013) and task diversity (see Horwitz and Horwitz, 2007, for a review)[3]. We focus on gender and ethnic diversity more because that is the data available to us than because we think these dimensions are more important than others.

There is a very large literature on the impact of diversity on a wide range of outcomes at the workplace level, spanning a wide range of academic disciplines including economics, management, psychology, sociology, and organizational behaviour. It is hard to summarize this vast literature but the meta-analysis of Joshi and Roh (2009) who survey the relationship between diversity and firm performance concludes that the direct effect of diversity on firm performance is zero, perhaps negative for the gender and ethnic diversity we consider in this paper (see Kochan et al, 2003, Knippenberg and Schippers, 2007, Horwitz and Horwitz, 2007, for surveys with a similar conclusion). However, many studies argue that the impact of diversity varies according to mediating factors, although such findings also tend not to be robust.

a. Gender

Before briefly reviewing the existing literature on the impact of gender diversity on a wide variety of workplace outcomes, one might ask why there would be any impact at all. The most plausible answer is that there is accumulating evidence of gender differences in attitudes to risk, competition and attitudes to others (see Croson and Gneezy, 2009, for a survey, or Sapienza,

[3] Gender and ethnic diversity being arguably two central dimensions of diversity, we focus primarily on them and leave other dimensions for future research.

Zingales and Maestripieri, 2009). It would not be surprising if these differences translated into differences in behaviour in the workplace.

There is a large literature on the impact of gender diversity on workplace outcomes and we do not attempt to survey it all. Here we summarize the strand of this literature that focuses on the impact of the share of women among senior management, sometimes chief executives, board members or senior executives as recent papers on this topic do try to obtain causal impacts[4]. Much of early literature exploits observed variation in the share of women on various outcomes, with very mixed results (see, for example, the overview in Ferreira, 2010, Deszo and Ross, 2012, O'Reilly and Main, 2012, and Noland, Moran and Kotschwar, 2016, for a recent cross-country study that also cites the existing literature). A concern with these studies is that one is not identifying the causal impact of having more women in senior management positions (see Adams and Ferreira, 2009, for one attempt to deal with this endogeneity problem). Consequently, a growing number of papers have explored the natural experiment in Norway of legislation requiring some firms to increase the board representation of women (see e.g. Ahern and Dittmar, 2012, Matsa and Miller, 2013; Bertrand et al, 2014, Dale-Olsen et al, 2014, Eckbo et al, 2015). Matsa and Miller (2013) found that affected firms undertake fewer workforce reductions than comparison firms, increasing relative labor costs and employment levels and reducing short-term profits. Bertrand et al (2014) found that there was little discernible impact on women's economic opportunities beyond the change in board composition itself. Ahern and Dittmar (2012) find large negative impacts on firm valuation but this conclusion is disputed by Eckbo et al (2015). Overall, the evidence for significant impacts is mixed (for a review see Hughes et al, 2017).

However, while the gender mix of the board might affect the overall strategy of the firm, senior executives are possibly too remote to have much impact on the experience of work for those lower down the corporate hierarchy. It may be that the gender mix of one's co-workers is more important for that and there is a literature on how gender diversity affects outcomes. Ely (2004) investigated the impact of gender (and other types of diversity) on the quality of team-working and team performance in a retail bank. Gender diversity was not found to be related to the outcomes studied. Ellison and Mullin (2014) use panel data from a professional services firm to investigate how the variation in gender diversity at office level is correlated with measures

[4] Mention should also be made of the literature on the impact of women having political rather than corporate power – see Pande and Ford (2011) for a review.

of social capital and revenues, finding little strong evidence of such a link (though they do find that social capital is significantly higher if the firm is perceived to be supportive of diversity). Most of these studies also rely on observational variation in gender diversity, though Ellison and Mullin (2014) attempt to address this by estimating models with office fixed effects and exploiting within-office variation which could be argued to be more exogenous. Our study both provides descriptive cross-sectional results and it also attempts to address the endogeneity issue similarly to Ellison and Mullin (2014), by exploiting within-plant variation on a large representative sample of establishments.

b. Ethnic Diversity

There is also a large literature on the impact of ethnic diversity on firm performance (see, for example, Leonard, Levine and Joshi, 2004; Herring, 2009; Richard et al, 2013; Andrevski et al, 2014; Stojmenovska et al, 2017; Herring, 2017). There is also research on the impact of diversity on productivity (Ottaviano and Peri, 2006), innovation (Ozgen, Nijkamp and Poot, 2011a, b), job separations (Miaari, Zussman and Zussman, 2012) and the relationship between manager and worker ethnicity (Giuliano, Leonard and Levine, 2011; Giuliano and Ransom, 2013; Aslund, Hensvik and Skans, 2014). But the literature on the impact of diversity on trust and identity within the workplace is small relative to the prominence this issue has received in the wider social capital literature (see, for example, Putnam, 2007, Dinesen and Sonderskov, 2012, the surveys by Portes and Vickstrom, 2011, and Van der Meer and Tolsma, 2014). Though whether there is a link between diversity and social capital in the neighbourhood is controversial e.g. in the UK see Laurence and Heath, (2008), Letki (2008), Andrews (2009), Fieldhouse and Cutts (2010), Twigg et al, (2010), Laurence (2011), Becares et al, (2011) Sturgis et al, (2011), Demireva and Heath (2014), Langella and Manning (2019), and Lymperopoulou et al (2022).

Data

The 2004 and 2011 WERS Surveys

The workplace data used in this study comes from the 2004 and 2011 UK Workplace Employee Relations Studies (WERS), an establishment (i.e. plant) based survey of employee relations that has been conducted 6 times to date (Department of Trade and Industry, 2014; Department for Business, Innovation and Skills, 2015). We only use the latest two studies as the earlier ones do not contain the variables we need for this paper. The population for the 2004 and 2011

surveys is all workplaces in Britain that have 5 or more employees, excluding agriculture, fishing, forestry, mining and private households. The population was stratified by workplace size and industry sector in order to achieve a target number of responses in each stratum.

There is first an interview with the most senior manager responsible for personnel issues in which information about the demographic profile of employment in the plant is also collected. The female share is computed from responses on employment of men and women which is also available for 9 main occupational groups. Similarly, the ethnic share is computed from responses on the number of employees from a non-white ethnic group. If the interviewed manager does not provide this number, she is directly asked instead to estimate the percentage of non-white within the workforce, which we use as well in that case.

There is also an interview with a worker representative if one exists, although we do not use this information in this paper. Finally, a self-completion questionnaire is distributed to 25 employees chosen at random (where the workplace has fewer than 25 employees, a questionnaire is given to all of them). The achieved numbers of responses from employees was 22451 from 1733 workplaces in 2004 and 21891 from 1923 workplaces in 2011. We construct workers' demographics from this questionnaire and use them as well in several analyses (see below). In particular, we construct individual-level measures of ethnicity based on the question "To which of these ethnic groups do you consider you belong?". From the 17 possible answers, we build four indicator variables for "Whites", "Blacks", "Asians" and individual from other backgrounds. "Whites" are respondents who report being either "British", "Irish" or from "any other white background". Workers reporting being "white and black African" or "white and Asian" are grouped with "Blacks" and "Asians", respectively.

More details on sampling and response rates can be found for the 2004 survey in Chaplin et al (2005) and for the 2011 survey in Deepchand et al (2013). The raw data is not representative of the population of UK establishments or employees but weights are provided allowing for the sampling design and survey non-response. In data at the establishment level (e.g. the manager questionnaire) establishment-level weights are provided to be representative of the population of establishments and employee-level weights to be representative of total employment. In data at the individual level (i.e. the employee questionnaire) employee weights are provided to be representative of total employment. In what follows we always use the employee-level or employee weights, including in plant-level analyses.

Trust and Identity Variables

For our purposes we are most interested in information collected in the employee questionnaire about how they feel about their job. These form the dependent variables in which we are interested. The questions whose response we analyze can be grouped into the following categories:

a. the level of trust between managers and employees
b. the extent to which the worker identifies with the values of the employer

which can be thought of as two dimensions of the level of 'social capital' within the workplace. On the level of trust between managers and workers, employees are asked "to what extent do you agree or disagree with the following statements about working here?"

a. Managers here can be relied upon to keep their promises
b. Managers here are sincere in attempting to understand employees' views
c. Managers here deal with employees honestly
d. Managers here treat employees fairly

The possible responses are on a 5-point Likert scale from strongly agree to strongly disagree.

The distribution of responses are reported for each year in the first panel of Table 1. These use the employee weights so should give an indication of the distribution of views of workers in GB as a whole. We restrict the sample to non-managerial workers (20514 employees in 2004 and 20104 in 2011) – perhaps unsurprisingly, managers have a higher opinion of managers. On average, workers are more likely to agree than disagree that their managers can be trusted though there is considerable variation. Trust also increases slightly over the studied period. The five questions related to trust are very highly correlated – Panel A of Table 2 presents the correlation matrix. Because there is very little independent information contained in the five different measures (they are highly correlated, with a Cronbach's alpha of 0.93) we combine them into a single trust index computed as the first principal component from a Principal Component Analysis of the four measures which we standardize to have a weighted mean of 0 and a weighted standard deviation of 1 on the sample of workers[5].

About the values and identity of the organisation, employees are asked "to what extent do you agree or disagree with the following statements about working here?"

[5] As our constructed index loads almost equally on each trust variable, taking instead a simple mean of these variables yields very similar conclusions.

a. I share many of the values of my organisation
b. I feel loyal to my organisation
c. I am proud to tell people who I work for

The possible responses are on a 5-point Likert scale from strongly agree to strongly disagree. The mean values of these responses are presented for each year in the second panel of Table 1. On average, workers are more likely to agree than disagree that they identify with their organization, and this even more the case in 2011 than in 2004. Panel B of Table 2 also presents the correlation matrix for the identity measures - the correlations here are not as strong though still very positive with a Cronbach's alpha of 0.85, that is still far above the conventional acceptability threshold of 0.7. Similarly, we construct a single identity index computed as the first component of a PCA of the three measures which we then standardize to have a weighted mean of 0 and a weighted standard deviation of 1 on the whole sample of workers[6]. The questions on trust refer to how the respondent thinks that managers treat employees in general whereas the identity questions ask about how the respondent feels. In spite of this, it is also worth noting that the correlation between the trust and identity index at individual level is 0.60, meaning those who think managers can be trusted are likely to have a high level of identity.

The trust and identity indices are the outcome variables that we use in this study – they are natural analogies to the variables on trust and identity used in the literature on the determinants of social capital within communities.

Table 3 reports summary statistics on the demographic characteristics of workers, both for the overall sample and men/women and whites/minorities. There are 18678 non-managers in 2004 and 16523 in 2011 that report their gender, ethnicity and all the demographic characteristics reported in Table 3.

Table 4 reports on the characteristics of the workplaces. We see that the average share of women in the sample of workplaces is slightly higher than 0.5, with a high standard deviation. The minority share is on average around 0.06 but 39% report having no ethnic minority employees and only 12% of workplaces have a minority share above 20%. The standard deviations of the trust and minority measures on the sample of workplaces are lower than 1 (around 0.7, because aggregating workers within workplace reduces the variance).

[6] Again, as our constructed index loads almost equally on each identity variable, taking instead a simple mean of these variables yields very similar conclusions.

2. Empirical Strategy

Computing plant-level measures of workers' trust and identity

We start by detailing our procedure to get plant-level measures of trust and identity conditional on workers' characteristics. First, we regress the outcome of interest (trust or identity) for individual i in plant j y_{ij} on individual characteristics x_i and plant-specific effects θ_j i.e. we have:

$$y_{ij} = \beta x_i + \theta_j + \varepsilon_{ij} \quad (1)$$

From this first step, we retrieve the estimated plant-specific effects, $\hat{\theta}_j$ which we then regress on a set of plant-specific regressors, p_j and the main variables of interest, some function of the share of women, f_j , and minorities, m_j , in the workplace i.e. we have something like:

$$\hat{\theta}_j = \gamma_0 p_j + \gamma_1 \phi\left(f_j\right) + \gamma_2 \phi\left(m_j\right) + u_j \quad (2)$$

This two-step procedure allows us to study both the effect of being female or from a minority as an individual on the outcome of interest (from equation 1) and the effect of the female and minority shares on workers with similar observable characteristics across workplaces (from equation 2), as the plant effects $\hat{\theta}_j$ are not influenced by the demographics of the respondents. Such a strategy has advantages over alternatives one might consider. One such alternative is to put $\left(f_j, m_j\right)$ directly into (1) – however this leads to bias if the individual characteristics are correlated with u_j. Another is to collapse (1) to plant level – however this means that β is only estimated using between-plant and not within-plant information which throws away a lot of information so is likely to lead to less precision. More importantly, for our purposes, we want to be able to identify the impact of the plant-level female and minority share on the outcomes for all workers and collapsing to plant level would not enable us to identify separately these effects from the individual impact of being female or minority on the outcomes. The plant fixed effects are generated regressors but they are used as dependent variables in the second stage so the usual arguments for correcting standard errors do not apply. One might, however, want to weight the observations to reflect the different probabilities of being in the

sample and the precision of the estimated plant effects (see Solon, Haider and Wooldridge, 2015, for a discussion of the arguments for and against weighting in regressions). In all the reported regressions we use employee weights throughout but the results are very similar if we use unweighted data or a different set of weights.

We discuss issues relating to the measurement, functional form, the potential endogeneity of the female and minority shares, and more generally the sorting of workers across firms below. The endogeneity issue is a concern given that individuals are very likely to sort into firms according to their preferences. This can directly affect the female and minority shares. Sorting can also be an issue if individuals differ in how much they care about the female/minority share and sort towards plants they find more appealing. These problems are discussed in the next section.

Results

Individual-Level Regressions

The results for the individual-level regressions (equation 1 above) are reported in Table 5. Apart from the female and ethnic group dummies, the other regressors included are age, gender, education, ethnicity, job tenure, 1-digit occupation, the log hourly wage, the log of hours, and whether on a fixed-term or temporary contract. There is not much interest in the particular coefficients, given the focus of the paper on gender and ethnic diversity[7]. It is nevertheless worth noting that, within plants, both women and ethnic minorities are generally more likely to have trust in management and to identify with the firm. These findings, which still hold if we remove the controls for the log hourly wage and the log of hours, contrast with the findings on generalized trust where women minorities often report significantly lower levels of generalized trust (Alesina and la Ferrara, 2002). Similarly, Manning and Roy (2010) and Nandi and Platt (2014) find lower levels of national identity for minorities (but not for women) though much of this is accounted for by the fact that they are more likely to be immigrants so may not translate directly to identity with their employer.

[7] When plant fixed effects are removed, the R-squared from these regressions are around 5% for both the trust and identity measures, showing that most of the variation across workers in these outcomes cannot be explained by individual socioeconomic characteristics.

Because women and minorities have higher levels of trust and identity, female- and minority-intensive plants will, other things equal, have higher raw levels of trust and identity. But we are also interested in how the levels of trust and identity for all workers are affected by the female and minority shares. It is the plant fixed effects that are informative about this. We now turn to the analysis of these effects.

OLS Analysis of Plant-Level Regressions

We consider estimation of the plant-level regressions (2). There are three main issues that we discuss. First, how the female and minority shares are to be measured; second, the functional form for the relationship between the shares and the outcomes, and, third, dealing with the endogeneity of the shares.

First, consider the precise aggregation level at which the female and minority shares should be measured. For the share of minorities we have only one variable (the overall minority share in the workplace with no further breakdown by type of occupation groups) so there is no choice. But there is more choice over the measurement of the female share – should it be the overall proportion of women, the proportion of female managers or the share of women among non-managerial employees? Our main results use the overall female share within the plant but we investigate robustness to alternative measures below.

Secondly there is the question of the functional form for the link between social capital and $\left(f_j, m_j\right)$. The part of the literature that focuses on diversity typically uses a measure like the variance which, given that gender and minority (in our data) is a binary variable is a function of $f_j\left(1-f_j\right)$ or $m_j\left(1-m_j\right)$. But restricting the impact of the shares to this functional form has the consequence of imposing the restriction that, for example, all-female and all-male workplaces have the same outcome when this may not be the case. It makes sense to include the share itself as a regressor and then to see whether the share squared or a related measure of diversity is also significant. To implement this idea, we follow Ellison and Mullin (2014) and calculate gender (ethnic) diversity as the standard deviation within each workplace of a dummy variable for male (non-white) that we scale linearly to fall into the [0,1] interval. We then

consider one minus this measure so that zeros indicate fully segregated workplaces and ones gender (ethnic) balanced workplaces[8].

Table 6 presents the OLS results for the trust index. The first column directly regresses the trust index at plant level (obtained from the PCA of the trust variables) on a linear term in the female and ethnic minority shares and other plant-level controls. Other plant-level controls that are included are the log of total employment in the firm, dummies for the age of the plant, whether the plant is part of a multi-plant firm, 2-digit or 3-digit industry dummies, and the share of minority groups in the ward in 1991. Panel A reports the results when we control for 2-digit industry, Panel B when we control for 3-digit industry. The results in the first column show that a higher female share leads, on average, to a significantly higher level of the trust index while there is an opposite relationship with the minority share. The impact of the female share is unsurprising given that, within plants, women are more likely than men to trust management. The impact of the ethnic minority share is more surprising given our earlier evidence that ethnic minorities are more trusting as individuals but could be explained by the fact that whites become less trusting when working with ethnic minorities.

The second column of Table 6 uses the plant fixed effects from the first stage as dependent variables and these are not contaminated by the fact that women/minorities are more trusting than men/whites as individuals. Consistent with expectations, the negative effect of the minority share on levels of trust increases while the positive impact of the female share decreases. An increase in the minority share from 0 to 100% is associated with a decrease in trust (of e.g. non-migrants or migrants, i.e. holding ethnicity of respondents constant) of around 40% of a standard deviation (also holding other workers' characteristics fixed, as we use the plant effects). This effect is highly statistically significant. For gender, an increase in the female share from 0 to 100% is associated with an increase in trust (holding gender constant) of around 15% of a standard deviation (significant at the 10% level only)[9].

The third column includes measures of diversity which is one way of seeing whether it is gender or ethnic diversity that matters rather than the shares. The estimated effects of the measures of diversity for either female or ethnic diversity are small and insignificantly different from zero. This means that while our results to this point suggest that there is an impact of the female

[8] Since we do not observe all workers within a workplace, the standard deviations are computed directly from the shares provided by the managers. For gender diversity, the standard deviation is equal to $\sqrt{f_j(1-f_j)}$.

[9] This is given the standard deviations of the female and minority sahres provided in Table 4.

share and minority share on plant-level trust it is not well-summarized by the statement that greater gender (ethnic) diversity improves (lowers) trust – it would be more accurate to say that more women improves trust while more ethnic minorities lowers it. The fourth column investigates this more directly by splitting the female and ethnic shares into subgroups. This is also a way of examining the linearity in the relationships between the shares and trust. We create dummy variables for having a female share less than 20%, 20-40% etc and dummy variables for the minority share being equal to 0 (39% of workplaces in the sample), between 0 and 0.08 (36% of workplaces), between 0.08 and 0.23 (15% of workplaces), and above 0.23 (remaining 10% of workplaces)[10]. It is striking that the coefficients suggest more positive effects on trust the higher is the female share, except when the female shares gets above 0.8. Overall, linearity seems a good approximation to the relationship. The same can be said for the minority share.

The final column explores what happens when we add controls for the presence of unions, consultation committees, and direct meetings between management and the workforce, as well as controls for the existence of formal procedures for dealing with (1) individual grievances and (2) discipline and dismissals. We do so because these factors are likely to be correlated with gender or ethnicity and former work suggested that they influence trust. Whitener et al (1997) for instance, argue that centralisation and the presence of due-process procedures for grievances or disciplinary matters can negatively affect trust while Guest et al (2008) highlight the role of collective bargaining or collective voice. The addition of these controls barely affects the estimated effect of the female share but highly increases the negative effect of the minority share. Adding endogenous controls that may themselves be a consequence of the extent of trust in the workplace is always tricky, and results should be interpreted with caution. Nevertheless, the fact that our conclusions remain unchanged when these controls are added is reassuring.

Turning to Panel B of Table 6, the relationship between trust and the female (minority) share is slightly stronger (weaker) when we include 3-digit industry dummies as opposed to 2-digit dummies. Overall results remain however very similar and conventional significance levels are unchanged.

[10] We do not construct equal-size groups but rather focus on workplaces above p75 and p90 in order to try to have results for workplaces where the share of non-whites starts to be large (e.g. above 0.23).

Table 7 does a similar exercise with the identity index as dependent variable. For the female share there is a significant positive effect when both 2-digit and 3-digit industry controls are included. That is, plants with a higher proportion of women have a higher average level of identity with the employer. This is over and above the fact that, within plants, women have a higher level of identity than men. For the ethnic minority share we find a significant negative effect when both 2- and 3-digit industry controls are introduced. The magnitude of these effects is comparable to those observed for trust.

To understand what kind of bias would be needed to overturn our OLS results in Tables 6 and 7, we perform Emily Oster's test of coefficient stability (Oster, 2017) for our preferred specifications with 3-digit industry and workplace controls (col. 2 in panel B of Tables 6 and 7). Given that workers' trust and identity are multifactorial subjective outcomes that are complex to model and explain, we assume that a "full model" after inclusion of omitted variables could explain at most 50% of the variance in these outcomes (to be compared with 0.21 for trust and 0.27 for identity in our preferred specifications). Under this assumption, we find that a degree of selection on unobservable characteristics equal to 26% (118%) of the amount of selection on observable characteristics would imply that the effect of the female share (minority share) is equal to 0. For identity, the relative degree of selection on unobservable characteristics sufficient to overturn our results is 36% of the degree of selection on observable for the female share and 477% for the minority share. Given that we already control for several factors establishment-level characteristics (and consider measures of trust and identity net of workers characteristics), such levels of relative selection on unobservable characteristics seems unlikely, even for the female share. This is reassuring regarding the robustness of our OLS findings.

Our main specification uses the female share of the plant as a whole as the relevant variable. But perhaps it is the female share among managers that is more important especially in generating trust in managers. The overall and managerial female shares have a correlation coefficient of 0.71 so it is hard to distinguish between their impacts. Nevertheless Table 8 reports estimates for the trust index and Table 9 for the identity index when the female share is replaced by either or both the female shares among managers and non-managers. The first column of Table 8 reports the estimate from column 2 of Table 6 when the female share is used as regressor instead of the overall female share. Column 2 of Table 8 then uses the female share among managers as the regressor. The estimated effects are of comparable in magnitude suggesting that the overall female share is what matters in practice in determining the trust

index. This is confirmed by the results in the third column where both measures are included – the effect of the non-managerial female is not significantly different from zero but remains very close in magnitude to that of the managerial share. The interaction between the two female shares may also be important if, for example, female workers are more trusting of female managers. Accordingly, column 4 of Table 8 includes the interaction between the non-managerial and managerial female shares – the coefficient is positive and large suggesting strong interaction effects. Table 9 repeats the exercise for the identity index with similar results. The non-managerial female share does seem the most important variable but high collinearity with the managerial female share implies one should consider this conclusion with some caution.

A relevant question regarding the results in Tables 6 and 7 is that the impact of female/minority share on trust may be different for men/women and whites/minorities. To examine this point, Table 10 estimates the model separately for men and women i.e. estimates a separate plant fixed-effect for each gender. The effect of the female share on both trust and identity is stronger for men than for women, though the difference is not statistically different from zero at the 5% level. The negative effect of ethnic diversity on trust however appears to be entirely driven by women, with the estimates for men being two to four times smaller and never statistically significant. In total, men seem to react more positively (or less negatively) than women to increases in both the female and the minority share.

Similarly, Table 11 provides separate estimates for whites and minorities. The effects of the minority share on identity are stronger for whites than minorities. For trust, the effects of both the female and minority shares tend to be larger in magnitude for whites but differences are not statistically significant at conventional levels. In total, whites seem to react more strongly than non-whites to increases in both the female and minority share (more positively for the female share and more negatively for the minority share).

Together results in Tables 10 and 11 also reveal that while men react positively to an increase in the female share, whites react negatively to an increase in the minority share. This sheds some light regarding why the female and minority shares have opposite relationships with trust or identity: the "dominant groups" (men or whites) does not seem to react similarly to an increase in the share of the "dominated groups" (women or non-whites) when we consider gender versus ethnicity. We discuss this further in the conclusion.

Taken at face value, the results in Tables 6 and 7 suggest that female intensive plants have higher levels of trust and identity. On the other hand high minority share plants have lower levels of trust and identity. One potential problem with these conclusions is that the estimated impact of the female/minority share may not be causal. A finding that a higher share of women or minorities in the workplace is associated with higher levels of trust in management could mean that more women leads to higher trust or it could mean that women/minorities are attracted to workplaces with higher levels of trust for completely different reasons. To alleviate these concerns to some extent, we turn to a 2004-2011 panel approach, exploiting the 989 workplaces that are observed both in 2004 and 2011. To implement it, we run the following regression model:

$$y_{ijt} = \gamma_1 \phi(f_{jt}) + \gamma_2 \phi(m_{jt}) + \theta_j + \alpha x_{it} + \beta x'_{jt} + \varepsilon_{ijt} \quad (3)$$

where θ_j are the time-invariant workplace fixed effects, x_{it} are time-varying individual controls (the same as those used when estimating equation (1)), x'_{jt} are time-varying workplace-level controls (workplace size, single-plant firm, and 9 occupational shares)

With equation (3), we estimate the relationships between variations in the female or minority shares over the 2004-2011 period and concomitant variations in workers' trust or identity. All workplaces are kept in order to better estimate the effect of time-varying individual characteristics which proves to also increase the precision of the estimates of interest.

Table 12 shows the results for trust and Table 13 for identity. We find results to be overall consistent with the results from cross-sectional specifications but we lack statistical power to detect significant effects at conventional levels, so most estimates are not statistically significant. Still, we find a positive (negative) relationship between changes in the female share (minority share) and workers' trust (Table 12, column 1) just as we did in the cross-section. These relationships disappear to some extent when we add controls for workers' and firms' (time-varying) characteristics (column 2), unless we focus on plants with changes in the female and minority shares larger than 5 percentage points over the 2004-2011 period (column 3). Among these workplaces where changes in the workforce composition are less likely to reflect only measurement error, we find a large marginally significant positive effect of the female share on trust (p=0.25) and a large marginally significant negative effect of the ethnic share on trust (p=0.14). Columns 4 and 5 reproduce columns 3 and 4 of Table 6 and show that the effects tend to be non-linear. For example, the negative effects of the minority share on trust or identity

appear to be driven by switches to the largest minority share group (above 23% of minority workers), an effect that is marginally significant (p=0.08).

For identity (Table 13), the effects of the female and minority shares are virtually zero once we control for workers and firms characteristics. This is because the effects of the shares are non-linear. For example, once we control for ethnic diversity, we find back a negative effect of the ethnic share (p=0.32, see column 4) which is also driven by switches to the largest minority share group (column 5).

To wrap up, the panel estimates are not entirely convincing due to the lack of statistical power, but when we focus on the most significant estimates, they are all in line with our conclusions from the cross-sectional results.

Conclusions

This paper has used the British Workplace Employee Relations Survey to investigate the impact of gender and ethnic diversity on the levels of workplace trust and identity, two dimensions of 'social capital' within the firm. Compared to the existing literature on social capital which mostly focuses on communities or nations, this study focuses on workplaces. This is legitimate as many people spend as much waking time at work as in their communities and interactions between people within firms have many similarities to interactions between people within communities (Coase, 1937).

We find that women and ethnic minorities as individuals have significantly higher levels of trust and identity within the firm. But the main focus of the paper is on the link between the female and minority shares and the trust and identity of all individuals once their individual characteristics, including gender and ethnicity, have been controlled for. We find a significant positive (negative) association between the female (minority) share and measures of social capital such as trust of managers or identity to the firm. However, panel estimates which are perhaps better suited to get closer to causality become very imprecise and not significant.

The fact that the associations with trust and identity are opposite for the female and minority shares is interesting in itself and suggests that different policy tools may be required to address the under-representation of women or ethnic minorities in some jobs or occupations. Regarding gender, a consistent positive effect of the female share on trust is found of a similar magnitude (around 15% of a standard deviation) in cross section OLS specifications. While panel estimates are less conclusive, they are good enough to discard a negative effect of the female

share on social capital. Our results therefore highlight that policies aimed at increasing exogenously gender diversity in traditionally male-dominated industries, jobs or occupations (such as quotas) should not have negative consequences for social capital, and may even be positive. Our results also go against the idea that gender diversity can deteriorate trust, for example because it generates more social conflicts in the workplace[11], or because men entrenched in traditionally male occupations are reluctant to work with women. Managers may hire women for male-dominated jobs with no fear that this is the case. Advertising such findings to decision-makers can be useful as their possibly erroneous beliefs about others' reactions to gender equity policies may prevent them to take action in cases where it could be desirable to do so.

In contrast, the negative association between the share of workers from an ethnic minority and social capital might be a source of concern as it suggests that whites may be reluctant to work with minorities, which in turn may rationalize hiring discrimination against minorities in firms where there is a large pre-existing white workforce. This is all the more a concern that social capital is presumed to positively affect firms' economic performance - as suggested for trust by Brown et al., 2015.

[11] Looking at the effect of the female share on conflicts (strikes or collective disputes) in the workplace, we do not find negative effects.

Table 1: Trust and Identity Variables in 2004 and 2011

		Strongly Disagree	disagree	Neither agree nor disagree	Agree	Strongly Agree	Mean	Number of obs.
Trust variables								
Managers can be relied upon to keep their promises	2004	6.9%	18.6%	28.0%	36.4%	10.2%	2.21 (1.14)	17987
	2011	6.3%	16.2%	29.6%	37.0%	10.9%	2.25 (1.13)	16135
Managers are sincere in attempting to understand employees' views	2004	6.1%	16.2%	24.8%	41.5%	11.4%	2.33 (1.13)	18167
	2011	5.6%	15.1%	23.7%	42.8%	12.8%	2.37 (1.14)	16214
Managers deal with employees honestly	2004	5.7%	14.2%	25.6%	41.7%	12.8%	2.38 (1.10)	18064
	2011	5.4%	12.9%	25.1%	43.1%	13.5%	2.41 (1.09)	16148
Managers treat employees fairly	2004	7.5%	13.7%	24.0%	40.6%	14.3%	2.38 (1.22)	18232
	2011	7.2%	12.6%	23.9%	41.3%	15.0%	2.40 (1.22)	16274
Identity variables								
I feel loyal to my organization	2004	2.9%	9.6%	34.9%	42.0%	10.5%	2.49 (0.82)	17930
	2011	1.6%	6.6%	29.0%	48.8%	13.9%	2.69 (0.73)	16109
I am proud to tell people who I work for	2004	2.9%	7.4%	20.9%	49.9%	19.0%	2.75 (0.88)	18386
	2011	2.3%	6.2%	17.9%	49.8%	23.9%	2.87 (0.84)	16368
I share many of the vales of my organization	2004	3.8%	7.8%	29.5%	39.8%	19.1%	2.62 (1.00)	18399
	2011	3.2%	6.7%	23.8%	41.3%	24.9%	2.78 (0.99)	16387

Notes:

1. Means come from numbering responses 0-4 as one goes from left to right
2. Responses to question on "Relations between managers and employees" go from very bad to very good
3. Number of observations are unweighted totals but reported frequencies use the employee weights provided in the data set
4. Employees observed in 2004 and 2011 are pooled together

Table 2: Correlations Among Trust and Identity Measures

Panel A: Trust Measures

	Managers can be relied upon to keep their promises	Managers are sincere in attempting to understand employees' views	Managers deal with employees honestly	Managers treat employees fairly	Relations between managers and employees are good
Managers can be relied upon to keep their promises	1.00				
Managers are sincere in attempting to understand employees' views	0.79	1.00			
Managers deal with employees honestly	0.78	0.82	1.00		
Managers treat employees fairly	0.72	0.74	0.77	1.00	
Relations between managers and employees are good	0.72	0.75	0.74	0.74	1.00

Notes: The number of unweighted observations is 33157. Responses are weighted using employee weights.

Panel B: Identity Variables

	I share many of the values of my organization	I feel loyal to my organization	I am proud to tell people who I work for
I share many of the values of my organization	1.00		
I feel loyal to my organization	0.63	1.00	
I am proud to tell people who I work for	0.60	0.73	1.00

Notes: The number of unweighted observations is 33825. Responses are weighted using employee weights.

Table 3: Descriptive Statistics: Individual Characteristics

	Whole Sample		Women		Men		Non-White		White	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Female	0.52	0.50	1.00	0.00	0.00	0.00	0.47	0.50	0.52	0.50
Age<=21	0.07	0.25	0.07	0.26	0.06	0.23	0.06	0.24	0.07	0.25
Age 22-29	0.18	0.38	0.18	0.38	0.17	0.38	0.27	0.44	0.17	0.37
Age 40-49	0.25	0.43	0.26	0.44	0.24	0.43	0.22	0.41	0.25	0.43
Age 50+	0.28	0.45	0.27	0.44	0.29	0.45	0.18	0.38	0.29	0.45
Master's or more	0.08	0.27	0.07	0.25	0.08	0.28	0.14	0.34	0.07	0.26
First degree	0.36	0.48	0.35	0.48	0.36	0.48	0.46	0.50	0.35	0.48
Highest Qual – A level	0.29	0.45	0.28	0.45	0.30	0.46	0.20	0.40	0.30	0.46
Highest Qual – GCSE	0.20	0.40	0.22	0.41	0.17	0.38	0.15	0.36	0.20	0.40
Highest Qual – none	0.14	0.35	0.14	0.34	0.15	0.36	0.15	0.35	0.14	0.35
Ethnicity- Asian	0.05	0.21	0.04	0.20	0.05	0.22	0.59	0.49	0.00	0.00
Ethnicity – Black	0.02	0.16	0.02	0.15	0.03	0.16	0.32	0.47	0.00	0.00
Ethnicity – Other	0.01	0.08	0.01	0.09	0.01	0.08	0.09	0.29	0.00	0.00
Tenure<1yr	0.16	0.37	0.16	0.37	0.16	0.36	0.22	0.42	0.15	0.36
Tenure 1-2yrs	0.12	0.33	0.13	0.33	0.12	0.32	0.16	0.37	0.12	0.32
Tenure 5-10yrs	0.21	0.41	0.21	0.41	0.21	0.41	0.18	0.39	0.21	0.41
Tenure 10yrs+	0.25	0.43	0.24	0.43	0.27	0.44	0.16	0.37	0.26	0.44
Log Hourly Wage	2.21	0.62	2.12	0.60	2.30	0.62	2.18	0.66	2.21	0.62
Log Hours	3.47	0.54	3.32	0.57	3.62	0.46	3.48	0.52	3.46	0.55
Fixed-term contract	0.03	0.18	0.03	0.18	0.03	0.18	0.06	0.23	0.03	0.18
Temporary contract	0.04	0.20	0.04	0.21	0.04	0.20	0.07	0.25	0.04	0.20
Professionals	0.14	0.35	0.12	0.32	0.16	0.37	0.14	0.34	0.14	0.35
Associate professional	0.18	0.39	0.19	0.39	0.18	0.38	0.19	0.39	0.18	0.39
Skilled Trade	0.08	0.27	0.01	0.11	0.15	0.36	0.04	0.21	0.08	0.27
Caring, Leisure, Service Occupations	0.09	0.28	0.13	0.34	0.03	0.18	0.10	0.29	0.08	0.28
Sales and Customer Service Occupations	0.09	0.29	0.13	0.34	0.05	0.22	0.11	0.31	0.09	0.29
Operatives	0.09	0.28	0.02	0.15	0.16	0.37	0.09	0.29	0.09	0.28
Elementary Occupations	0.14	0.34	0.11	0.31	0.17	0.37	0.17	0.38	0.14	0.34
Number of Observations	35201	35201	19935	19935	15266	15266	2434	2434	32767	32767

Notes: These are weighted means using the employee weights.

Table 4: Descriptive Statistics: Plant-Level Characteristics

	Sample Size	Mean	s.d.
Female Share of Total Employment	3421	0.55	0.32
Ethnic Minority Share of Total Employment	3421	0.06	0.15
Log Plant Employment	3421	2.71	0.95
Plant Age 0-5yrs	3421	0.13	0.34
Plant Age 6-15yrs	3421	0.31	0.46
Plant Age 16-25yrs	3421	0.22	0.42
Plant Age 25+yrs	3421	0.33	0.47
Single Plant Firm	3421	1.36	0.48
Year=2011	3421	0.47	0.50
Share Managers	3421	0.16	0.14
Share Professionals			
Share Associate Professionals	3421	0.09	0.18
Share Administrative Staff	3421	0.08	0.19
Share Skilled Trades	3421	0.15	0.21
Share Caring and Leisure	3421	0.07	0.18
Share Sales and Customer Service	3421	0.10	0.25
Share Operatives	3421	0.17	0.30
Share Elementary Occupations	3421	0.07	0.19
Trust Index	3416	0.26	0.73
Identity Index	3407	0.12	0.69

Notes: These are weighted means using plant-level weights. Years 2004 and 2011 are pooled together.

Table 5: Results of Individual-Level Regressions: Trust and Identity Index

	Individual Trust Index		Individual Identity Index	
	Coeff	s.e.	Coeff	s.e.
Female	0.030	0.020	0.099	0.021
Age<=21	0.041	0.040	-0.037	0.039
Age 22-29	0.011	0.024	-0.068	0.025
Age 40-49	0.005	0.021	0.033	0.021
Age 50+	0.041	0.022	0.116	0.023
Highest Qual – First degree	-0.028	0.032	-0.051	0.034
Highest Qual – A level	0.034	0.036	0.042	0.037
Highest Qual – GCSE	0.059	0.037	0.045	0.039
Highest Qual – none	0.145	0.042	0.111	0.042
Ethnicity- Asian	0.057	0.042	0.313	0.043
Ethnicity – Black	0.095	0.061	0.212	0.058
Ethnicity – Other	-0.089	0.096	-0.074	0.090
Tenure<1yr	0.361	0.026	0.181	0.026
Tenure 1-2yrs	0.149	0.026	0.035	0.026
Tenure 5-10yrs	-0.072	0.022	-0.026	0.022
Tenure 10yrs+	-0.093	0.023	-0.019	0.024
Log Hourly Wage	0.066	0.019	0.138	0.022
Log Hours	-0.022	0.018	0.115	0.020
Fixed-term contract	0.081	0.043	-0.009	0.046
Temporary contract	0.093	0.040	0.006	0.041
Professionals	-0.011	0.033	-0.003	0.035
Associate professional	-0.026	0.026	0.008	0.029
Skilled Trade	-0.208	0.041	-0.199	0.042
Caring, Leisure, Service Occupations	-0.050	0.034	0.023	0.032
Sales and Customer Service Occupations	0.015	0.052	0.072	0.048
Operatives	-0.244	0.045	-0.248	0.048
Elementary Occupations	-0.095	0.034	-0.129	0.033
Constant	-0.119	0.098	-0.800	0.109
Plant X Year fixed effects	Yes		Yes	
R-squared	0.326		0.284	
Adjusted R-squared	0.244		0.199	
Number of obs	33375		33825	

Notes: Observations are weighted using employee weights and plant times year of survey (2004 or 2011) are also included. Standard errors are clustered at plant level. Trust and identity are measured at the individual level. Plant fixed effects obtained from these regressions are used as plant-level measures of trust and identity in the rest of the paper and are named "estimated plant effects". These measures are independent from the observable characteristics of the workforce that are included as controls in the regressions.

Table 6: Effect of Female/Minority Share on Trust Index: OLS and Functional Form

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Trust index	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects
Panel A: 2-digit industry controls					
Female share	0.164 (0.059)	0.104 (0.058)	0.087 (0.062)		0.096 (0.066)
Gender diversity			0.034 (0.041)		
Ethnic Minority Share	-0.181 (0.083)	-0.295 (0.081)	-0.171 (0.110)		-0.469 (0.087)
Ethnic diversity			0.089 (0.054)		
Female share <0.2				-0.051 (0.049)	
Female share 0.2-0.4				-0.027 (0.043)	
Female share 0.6-0.8				0.077 (0.040)	
Female share >0.8				0.058 (0.040)	
Ethnic diversity]0-0.08]				-0.027 (0.041)	
Ethnic diversity 0.08-0.23				-0.096 (0.041)	
Ethnic diversity >0.23				-0.148 (0.044)	
Add. controls	No	No	No	No	Yes
R-squared	0.148	0.139	0.140	0.141	0.165
Panel B: 3-digit industry controls					
Female share	0.184 (0.063)	0.136 (0.062)	0.105 (0.067)		0.126 (0.071)
Gender diversity			0.055 (0.042)		
Ethnic Minority Share	-0.161 (0.084)	-0.260 (0.083)	-0.175 (0.112)		-0.491 (0.088)
Ethnic diversity			0.063 (0.055)		
Female share <0.2				-0.044 (0.052)	
Female share 0.2-0.4				-0.061 (0.046)	
Female share 0.6-0.8				0.083 (0.041)	
Female share >0.8				0.078 (0.042)	
Ethnic diversity]0-0.08]				-0.013 (0.041)	
Ethnic diversity 0.08-0.23				-0.070 (0.042)	
Ethnic diversity >0.23				-0.123 (0.045)	
Add. controls	No	No	No	No	Yes
R-squared	0.217	0.207	0.207	0.208	0.244

Notes:

1. The number of observations is 3416 in the first 4 columns and 2688 in the last one.

2. The analysis is done at the plant level pooling together years 2004 and 2011
3. Observations are weighted using plant-level weights
4. Standard errors are reported in parentheses
5. Other regressors in the first four columns are those reported in Table 4 (except of course the trust and identity indexes which are the dependent variables). In the last column, we further control for the presence of unions, consultation committees, direct meetings between management and the workforce, the existence of formal procedures for dealing with (i) individual grievances and (ii) discipline and dismissals.

Table 7: Effect of Female/Minority Share on Identity Index: OLS and Functional Form

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Identity index	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects
Panel A: 2-digit industry controls					
Female share	0.191 (0.054)	0.134 (0.054)	0.121 (0.057)		0.151 (0.056)
Gender diversity			0.023 (0.038)		
Ethnic Minority Share	-0.115 (0.075)	-0.302 (0.075)	-0.038 (0.102)		-0.525 (0.074)
Ethnic diversity			0.190 (0.050)		
Female share <0.2				-0.047 (0.045)	
Female share 0.2-0.4				-0.041 (0.040)	
Female share 0.6-0.8				0.079 (0.037)	
Female share >0.8				0.063 (0.037)	
Ethnic share]0-0.08]				-0.009 (0.038)	
Ethnic share 0.08-0.23				-0.134 (0.037)	
Ethnic share >0.23				-0.188 (0.041)	
Add. controls	No	No	No	No	Yes
R-squared	0.203	0.197	0.201	0.202	0.274
Panel B: 3-digit industry controls					
Female share	0.158 (0.058)	0.113 (0.057)	0.099 (0.061)		0.137 (0.061)
Gender diversity			0.026 (0.039)		
Ethnic Minority Share	-0.116 (0.076)	-0.287 (0.076)	-0.011 (0.102)		-0.536 (0.075)
Ethnic diversity			0.203 (0.050)		
Female share <0.2				-0.031 (0.048)	
Female share 0.2-0.4				-0.030 (0.042)	
Female share 0.6-0.8				0.091 (0.037)	
Female share >0.8				0.057 (0.038)	
Ethnic share]0-0.08]				-0.011 (0.037)	
Ethnic share 0.08-0.23				-0.133 (0.038)	
Ethnic share >0.23				-0.189 (0.041)	
Add. controls	No	No	No	No	Yes
R-squared	0.277	0.271	0.275	0.276	0.334

Notes:

1. Number of observations is 3407 in the first four columns and 2679 in the last one.

2. The analysis is done at the plant level pooling together years 2004 and 2011
3. Observations are weighted using plant-level weights
4. Standard errors are reported in parentheses
5. Other regressors in the first four columns are those reported in Table 4. In the last column, we further control for the presence of unions, consultation committees, direct meetings between management and the workforce, the existence of formal procedures for dealing with (i) individual grievances and (ii) discipline and dismissals.

Table 8: Effect of Female Share on Trust Index: Experimentation with Female Share

	(1)	(2)	(3)	(4)
Panel A: 2-digit industry controls				
Female non-managerial share	0.088 (0.054)		0.087 (0.061)	0.152 (0.062)
Female managerial share		0.110 (0.037)	0.083 (0.039)	-0.021 (0.046)
(Female non-managerial share-0.5)* (Female managerial share-0.5)				0.529 (0.123)
Ethnic Minority Share	-0.296 (0.082)	-0.277 (0.080)	-0.258 (0.082)	-0.250 (0.081)
R-squared	0.138	0.147	0.145	0.150
Panel B: 3-digit industry controls				
Female non-managerial share	0.107 (0.058)		0.101 (0.066)	0.168 (0.067)
Female managerial share		0.085 (0.038)	0.061 (0.041)	-0.070 (0.049)
(Female non-managerial share-0.5)* (Female managerial share-0.5)				0.633 (0.128)
Ethnic Minority Share	-0.267 (0.083)	-0.218 (0.082)	-0.199 (0.084)	-0.204 (0.084)
R-squared	0.206	0.211	0.211	0.217

Notes:

1. Number of observations is 3131
2. The analysis is done at the plant level pooling together years 2004 and 2011
3. Observations are weighted using plant-level weights
4. Standard errors are reported in parentheses
5. Other regressors are those reported in Table 4

Table 9: Effect of Female Share on Identity Index: Experimentation with Female Share

	(1)	(2)	(3)	(4)
Panel A: 2-digit industry controls				
Female non-managerial share	0.139 (0.050)		0.167 (0.056)	0.207 (0.058)
Female managerial share		0.093 (0.034)	0.038 (0.036)	-0.023 (0.043)
(Female non-managerial share-0.5)* (Female managerial share-0.5)				0.301 (0.114)
Ethnic Minority Share	-0.294 (0.075)	-0.249 (0.074)	-0.211 (0.075)	-0.205 (0.075)
R-squared	0.197	0.194	0.194	0.196
Panel B: 3-digit industry controls				
Female non-managerial share	0.118 (0.054)		0.143 (0.060)	0.182 (0.062)
Female managerial share		0.059 (0.034)	0.018 (0.037)	-0.054 (0.045)
(Female non-managerial share-0.5)* (Female managerial share-0.5)				0.341 (0.118)
Ethnic Minority Share	-0.283 (0.076)	-0.224 (0.075)	-0.193 (0.077)	-0.194 (0.076)
R-squared	0.270	0.273	0.272	0.274

Notes:

1. Number of observations is 3124
2. The analysis is done at the plant level pooling together years 2004 and 2011
3. Observations are weighted using employee-level weights
4. Standard errors are reported in parentheses. Other regressors are those reported in Table 4.

Table 10: Impact of Female/Minority Share on Trust and Identity: Male and Female Equations

	Coefficient on Female Share		Coefficient on Minority Share		R-squared		
Sample	2-digit controls	3-digit controls	2-digit controls	3-digit controls	2-digit controls	3-digit controls	Number of Observations
Panel A: Trust Index							
Women	0.208 (0.074)	0.127 (0.083)	-0.226 (0.085)	-0.223 (0.087)	0.129	0.169	3107
Men	0.326 (0.081)	0.189 (0.090)	-0.044 (0.091)	-0.064 (0.093)	0.147	0.190	2827
Panel B: Identity Index							
Women	0.102 (0.072)	-0.001 (0.07)	-0.358 (0.082)	-0.372 (0.083)	0.0.140	0.197	3105
Men	0.151 (0.079)	0.101 (0.090)	-0.262 (0.089)	-0.235 (0.091)	0.163	0.202	2814

Notes:

1. The analysis is done at the plant level pooling together years 2004 and 2011

2. "Women" and "Men" indicate that plant trust or identity fixed-effect have been estimated separately for each gender using equation (1) and plugged in as the dependent variable in the plant-level regression
3. Observations are weighted using employee-level weights
4. Standard errors are reported in parentheses. Other regressors are those reported in Table 4

Table 11: Impact of Female/Minority Share on Trust and Identity: White and Minority Equations

	Coefficient on Female Share		Coefficient on Minority Share		R-squared		
Sample	2-digit controls	3-digit controls	2-digit controls	3-digit controls	2-digit controls	3-digit controls	Number of Observations
Panel A: Trust Index							
White	0.242 (0.062)	0.141 (0.070)	-0.145 (0.082)	-0.175 (0.083)	0.183	0.228	2836
Minority	0.070 (0.172)	0.130 (0.203)	-0.093 (0.140)	-0.025 (0.148)	0.096	0.169	1034
Panel B: Identity Index							
White	0.146 (0.070)	0.062 (0.067)	-0.399 (0.079)	-0.429 (0.079)	0.195	0.256	2828
Minority	0.114 (0.176)	0.128 (0.204)	-0.082 (0.142)	-0.026 (0.148)	0.108	0.214	1047

Notes:

1. The analysis is done at the plant level pooling together years 2004 and 2011
2. "White" and "Minority" indicate that plant trust or identity fixed-effect have been estimated separately for each ethnic groupe using equation (1) and plugged in as the dependent variable in the plant-level regression
3. Observations are weighted using employee-level weights
4. Standard errors are reported in parentheses
5. Other regressors are those reported in Table 4

Table 12: Effect of Female/Minority Share on Trust Index. Panel estimates 2004-2011

	(1)	(2)	(3)	(4)	(5)
	Dependent variable is the Trust Index				
Female share	0.289	0.051	0.454	0.034	
	(0.171)	(0.181)	(0.395)	(0.186)	
Female diversity				-0.072	
				(0.132)	
Ethnic Minority share	-0.299	-0.261	-0.501	-0.415	
	(0.233)	(0.245)	(0.336)	(0.280)	
Ethnic diversity				0.093	
				(0.135)	
Female share <0.2					0.026
					(0.091)
Female share 0.2-0.4					-0.014
					(0.111)
Female share 0.6-0.8					0.020
					(0.124)
Female share >0.8					0.055
					(0.140)
Ethnic share]0-0.08]					0.008
					(0.054)
Ethnic share 0.08-0.23					0.041
					(0.076)
Ethnic share >0.23					-0.206
					(0.116)
Individual controls	No	Yes	Yes	Yes	Yes
Workplace controls	No	Yes	Yes	Yes	Yes
Workplace fixed effects	Yes	Yes	Yes	Yes	Yes
Changes in shares>0.05	No	No	Yes	No	No
Observations	24,613	22,508	10,872	22,508	22,508
R-squared	0.231	0.261	0.285	0.261	0.261

Notes: Standard errors are clustered at workplace level. Individual controls are those shown in Table 3. Workplace controls are the log of the number of employees, a dummy for being a single-plant firm and the share of workers in each of 8 occupational groups.

Table 13: Effect of Female/Minority Share on Identity Index. Panel estimates 2004-2011

	(1)	(2)	(3)	(4)	(5)
	Dependent variable is the Identity Index				
Female share	0.230	0.007	0.028	0.003	
	(0.180)	(0.192)	(0.390)	(0.191)	
Female diversity				0.210	
				(0.132)	
Ethnic Minority share	0.218	0.036	0.166	-0.281	
	(0.206)	(0.224)	(0.276)	(0.280)	
Ethnic diversity				0.180	
				(0.140)	
Female share <0.2					0.170
					(0.107)
Female share 0.2-0.4					0.100
					(0.149)
Female share 0.6-0.8					0.060
					(0.154)
Female share >0.8					0.056
					(0.158)
Ethnic share]0-0.08]					0.057
					(0.057)
Ethnic share 0.08-0.23					0.062
					(0.093)
Ethnic share >0.23					-0.091
					(0.110)
Individual controls	No	Yes	Yes	Yes	Yes
Workplace controls	No	Yes	Yes	Yes	Yes
Workplace fixed effects	Yes	Yes	Yes	Yes	Yes
Changes in shares>0.05	No	No	Yes	No	No
Observations	24,941	22,826	11,022	22,826	22,826
R-squared	0.209	0.234	0.244	0.234	0.235

Notes: Standard errors are clustered at workplace level. Individual controls are those shown in Table 3. Workplace controls are the log of the number of employees, a dummy for being a single-plant firm and the share of workers in each of 8 occupational groups.

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