CENTRE *for* ECONOMIC
P E R F O R M A N C E

CEP Discussion Paper No 1460

December 2016

Diversity and Social Capital Within the Workplace: Evidence from Britain

Thomas Breda
Alan Manning

THE LONDON SCHOOL
OF ECONOMICS AND
POLITICAL SCIENCE ■

E·S·R·C
ECONOMIC
& SOCIAL
RESEARCH
COUNCIL

Abstract

This paper uses the British Workplace Employee Relations Survey to investigate the impact of gender and ethnic diversity on workers' level of trust in managers and 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. In contrast to much of the existing literature we pay particular attention to the estimation of causal effects, using an instrumental variable strategy. We find evidence that both women and minorities have higher levels of workplace trust and identity as individuals. But we also find evidence that a higher female share in the plant is associated with higher trust and identity (stronger for trust than identity) and that a higher minority share is associated lower trust and identity (stronger for identity than trust). However, in line with much of the literature, these results are not always significantly different from zero and they are sensitive to specification.

Keywords: trust, identity, diversity, workplace
JEL codes: M5

Published by
Centre for Economic Performance
London School of Economics and Political Science
Houghton Street
London WC2A 2AE

<u>Introduction</u>

Many societies are becoming more diverse in a number of dimensions. 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, communities and firms. There are two main arguments about the impact on firms. First, that diversity in people leads to diversity in thinking (Cox et al, 1991), and that, handled correctly, this adds values 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), difficulties that it may or may not be possible to overcome.

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 from economics, to management, to psychology, to sociology, and to 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 conclude 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 Knippenberg and Schippers, 2007, for a survey 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.

Our approach in this paper differs from much of the literature in the outcome variables we study. We focus on 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. We think these are of interest because of debates that link 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, for critical 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. Most of the mechanisms put forward for why diversity might affect trust could also be expected to apply within the workplace – after all, many people spend as much time at work as they do in their communities. So, we think it is interesting to consider the impact of diversity on trust and identity within the firm[1].

But there is one aspect of diversity within the firm that is not shared within nations or communities. One might expect that a firm exerts more centralized control over the diversity of its workforce than nations or communities do over their residents (though nation-building exercises are one way countries might seek to influence diversity - e.g. Miguel, 2004, on the comparison of Kenya and Tanzania)[2]. This implies that diversity is very likely to be endogenous to the firm but the existing literature largely ignores this issue[3]. In this paper we pay more attention to estimating the causal impact of diversity.

The data we use comes from the UK Workplace Employee Relations Survey (WERS) for 2004 and 2011. We investigate the impact of gender and ethnic diversity on trust of managers and identity with the values of the firm. We develop instruments for both the female share and the minority share. 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 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). However, in line with much of the

---

[1] One should also mention that the diversity of workers and customers may also have an effect on firm performance though the evidence on this is not strong – see, for example, Leonard, Levine and Joshi (2004).

[2] 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.

[3] 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 – this paper tries to address that gap.

literature, these results are not always significantly different from zero and they are sensitive to specification.

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
   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 one might think there is 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, Zingales and Maestripieri, 2009), though whether these are the result of nature or nurture is more debatable. 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 of 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

---

[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.

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.

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 team-working and tem 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 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 attempts to address this issue by using instruments for plant-level gender diversity.

b. Ethnic Diversity

There is also a large literature on the impact of ethnic diversity on firm performance – Richard et al, 2013; Andrevski et al, 2014, being two recent examples). There is also a literature on the impact on productivity (Ottaviano and Peri, 2006), innovation (Ozgen, Nijkamp and Poot, 2011a, b) and job separations (Miaari, Zussman and Zussman, 2012). 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 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) and Langella and Manning (2016).

2. <u>Data</u>

The workplace data used in this study comes from the 2004 and 2011 UK Workplace Employee Relations Studies (WERS), an establishment based survey of employee relations that has been conducted 6 times to date. We only use the latest two studies as the earlier ones do not contain the variables we need for this paper. WERS is a sample of workplaces with more than 5 employees. 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. There is also an interview with a worker representative if one exists. Finally, a self-completion questionnaire is distributed to up to 25 employees at the workplace.

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. Mangers 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. And there is a question

e. In general, how would you describe relations between managers and employees here?

With five possible responses varying from very bad to very good.

The distribution of responses are reported in the first panel of Table 1. We restrict the sample to non-managerial workers – 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. 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 we combine them into a single trust index computed as a simple mean of the five measures.

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?"

    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 in the second panel of Table 1. On average, workers are more likely to agree than disagree that they identify with their organization. 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. We construct a a single identity index computed as a simple mean of the three measures.

The trust and identity indices are the outcome variables that we use in this study. It is natural to ask why they are of interest as compared to, say, measures of financial performance. WERS does contain some measures of financial performance both the subjective view of managers and (more rarely) objective accounting data. However, Forth and McNabb (2008) suggest that the subjective and objective measures are not as highly correlated as one would like and we found that results based on both measures were unconvincing because of large standard errors. However, it does seem likely that higher trust and identity are associated with better workplace performance even if we cannot establish such a link in our data.

Table 3 reports summary statistics on the demographic characteristics of workers and Table 4 on the characteristics of the workplaces.

3.   Empirical Strategy

Our basic estimation procedure has two steps. First, we regress the outcome of interest for individual i in plant j y_{ij} on individual characteristics x_i and plant-specific effects θ_j i.e. we have:

$$y_{ij} = \beta x_i + \theta_j + \varepsilon_{ij} \tag{1.1}$$

From this first-stage, 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 variable of interest, some function of the share of women, f_j , and minorities, m_j , in the workplace i.e. we have something like:

$$\hat{\theta}_j = \gamma_0 p_j + \gamma_1 \phi(f_j) + \gamma_2 \phi(m_j) + u_j \tag{1.2}$$

This two-step procedure has advantages over alternatives one might consider. One such alternative is to put (f_j, m_j) directly into (1.1) – however this leads to bias if the individual characteristics are correlated with u_j. Another is to collapse (1.1) 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 and does not enable us to identify the impact of an individual characteristic from a plant-level average. We discuss issues relating to the measurement, functional form and the potential endogeneity of the female and minority share below[5].

4. Results

Individual-Level Regressions

The results for the individual-level regressions are reported in Table A1 and A2. There is not much interest in the particular coefficients though, given the focus of the paper on gender and ethnic diversity, it is worth noting that, within plants, both women and ethnic minorities are

---

[5] There is one way in which our strategy will lead to bias. If unobserved individual components in (1) affect sorting into plants then the plant fixed-effects will be biased. To deal with this problem would require instruments for the choice of plants, as many instruments as plants, which is not feasible.

generally more likely to have trust in management and to identify with the firm. These findings 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.

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 now 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, secondly, dealing with the endogeneity of the shares.

First, consider the precise form of how the female and minority share should be measured. For the share of minorities we have only one variable (the overall minority share in the workplace with no further breakdown into other minority 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? In practice these are very highly correlated so one cannot distinguish cleanly between them. As a result we use the overall female share while acknowledging that it could be some other measure of the share that is the important variable.

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 is also significant. If the linear and quadratic terms have equal but opposite signs that would support the hypothesis that it is the diversity measure above that is important. In addition to the linear shares we actually use $\left(f_j - 0.5\right)^2$ and $\left(m_j - 0.1\right)^2$ so that the impact of the linear term for the female share can be interpreted as the effect of increasing the female share when there are equal numbers of men and women and the impact of the linear term for the minority share can be interpreted as the effect of increasing the minority share when it is 10%, close to the mean in the sample. Because the proportion of minorities is low in most of the sample, there is no prospect of identifying outcomes in plants with high shares of ethnic minorities with any degree of precision.

Table 5 presents the OLS results for the trust index. The first column regresses the raw mean of the trust index at plant level 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 no strong 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 though the ethnic minority share is more surprising given that ethnic minorities are more trusting as individuals. However, the second column 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. There still remains a significant positive effect of the female share on levels of trust while the impact of the minority share is negative though not significantly different from zero. The third column includes quadratic terms which is one way of seeing whether it is the diversity index that is important. The quadratic term is small and insignificantly different from zero. This means that while our results to this point suggest that there is a significant impact of the female share on plant-level trust it is not well-summarized by the statement that greater gender diversity improves trust – it would be more accurate to say that more women improves trust. The square in the ethnic minority share is not significantly different from zero. The fourth column investigates the linearity further creating dummy variables for having a female share less than 20%, 20-40% etc. It is striking

that the coefficients suggest more positive effects on trust the higher is the female share. Linearity seems a good approximation to the relationship. The relationship between trust and the female share is slightly weaker when we include 3-digit industry dummies as opposed to 2-digit dummies. However the relationship between trust and the ethnic minority share is stronger when 3-digit industry dummies are included though not significantly different from zero. The final column explores what happens when we include as an extra regressor the female share at national level at 4-digit industry (we cannot include dummies for 4-digit industry as the number of observations per industry is too small). The plant-level female share is more important than the industry share, suggestive of an effect at plant level. However whether this effect is causal we consider later.

The point estimates for the female share typically vary between 0.15 and 0.30, depending on the specification and the use of 2-digit or 3-digit industry controls. These estimates imply that a variation from 0 to 1 in the female share is associated with an increase of 20 to 40% of a standard deviation in the trust index (see Table 4). Similarly, a coefficient of -0.1 for the ethnic minority share means that going from no minority to only minority workers is associated with a 20% decrease in the trust index. Given our sample size and the typical values of the estimates' standard errors, it seems unlikely to detect association of a smaller magnitude.

Table 6 does a similar exercise with the identity index as dependent variable. For the female share there is a significant positive effect when 2-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. But the estimated effects are reduced in size and not significantly different from zero when 3-digit industry controls are introduced. For the ethnic minority share we find a significant negative effect when both 2- and 3-digit industry controls are introduced.

One concern with these results is that the impact of female/minority share on trust is different for men/women and whites/minorities. To allay these fears Table 7 estimates the model separately for men and women. If anything the effects are stronger for men than for women – it is certainly not the case that the effects are confined to women. Table 8 does the same for whites and minorities. The effects on identity do seem stronger for whites than minorities but otherwise there are no large differences.

Taken at face value, the results in Tables 5 and 6 suggest that female intensive plants have higher levels of trust and identity though the results are somewhat stronger for trust than identity. On the other hand high minority share plants have lower levels of trust and identity though the results are stronger for identity than trust. However these negative effects of the minority share almost exactly off-set the positive effects from the ethnic minority individuals which means that there is no overall correlation between trust, identity and the minority share as one can see in the first columns of Tables 5 and 6 where the dependent variable is the average trust and identity indices, with no correction for individual characteristics.

But 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 some completely different reasons. For that reason we turn to an IV approach.

The IV Strategy

For the gender share, we report results with two instruments. The first instrument is the national female share in the 4-digit industry. The regressions do control for 2- or 3-digit industry so the validity of this instrument depends on assuming that, once one has controlled for broad industry, the gender mix of more disaggregated industries can be treated as exogenous. This is obviously an assumption that one might question though the results in Tables 5 and 6 do not find a powerful impact for the 4-digit female share once one controls for the plant female share.

We also use an instrument based on the industry mix of the local area. Different areas specialize in different industries (largely for historic reasons) which have differing proportions of women in employment. This means that the structure of employment is more conducive to female employment in some areas than others while the variation in the female share of the population is very small. There is considerable variation across areas and we can use this to construct an instrument. Put simply, if area A specializes in female-intensive industries more than area B then it is likely that the plants in area A will find it harder to recruit women so will, other things equal, be likely to have a lower fraction of women.

The instrument for area a is given by:

$$z_{fa} = \sum \theta_{ia} f_i$$

where θ is the share of industry i in area a and f is the national female-intensity of industry i.

To implement this idea we use the geo-coded version of WERS that identifies the postcode of the workplace. We then map the postcode to the ward – there are almost 9000 wards in the UK with an average population of about 6500 people. We then map to the industry shares of employment by ward using data from the Business Register and Employment Survey (BRES). We compute the national female-intensity of each industry using the Labour Force Survey. Combining these two sources of information gives us an estimate of the female-intensity of employment in each ward. Because a plant typically draws its workforce not only from its own ward but from surrounding wards we use a weighted average of these ward-specific female-intensities as our instrument where the weights decline with distance from the home ward.

There is considerable variation in the predicted feminization of employment across wards for the plants in our sample - Figure 1 presents the histogram. Because workers in a plant do not all come from the same ward, we use a weighted average of the predicted female share around the workplace ward.

Our data source for the ethnic mix of local areas are the decennial censuses for 1991, 2001, and 2011. We impute values for the 2004 WERS (a non-census year) using linear interpolation between 2001 and 2011.

For the ethnic minority share we use the predicted minority share based on minority shares of nine ethnic groups in 1991 and the growth in population of different ethnic groups. That is, the instrument for area a is given by:

$$z_{wa,y} = \frac{\dfrac{P^{UK}_{w,y}}{P^{UK}_{w,1991}} P_{wa,1991}}{\sum_g \dfrac{P^{UK}_{g,y}}{P^{UK}_{g,1991}} P_{ga,1991}}$$

Where $P_{ga,y}$ is the population of ethnic group g in year y in area a, and $P^{UK}_{g,1991}$ is the UK population of ethnic group g in year y. This instrument can be thought of as the predicted white share in the ward if the population of all ethnic groups in the ward had grown at the

same rate as the UK population for those ethnic groups. It is a 'Bartik' style instrument that is commonly used in the immigration literature (see, for example, Card, 2001). For the purpose of constructing this instrument we use 9 ethnic groups – whites, Black Caribbean, Black African, Black Other, Indian, Pakistani, Bangladeshi, Chinese, Asian Other and Other. We compute the predicted white share in each ward in 2011 (a census year) and 2004 (by interpolating between the 2001 and 2011 censuses). As for the female share instrument, we take a weighted average around the workplace ward. We can control for concerns about the baseline proportions of ethnic minorities being endogenous by including them as regressors.

Table 9 reports the first-stages for the female and minority share at plant level. The first column shows the results when 2-digit industry dummies are included, the second column when there are 3-digit industry dummies included. One can see that both instruments of the female share are relatively strong though the 4-digit industry share is stronger. The instrument for the minority share is always strong. We then use these instruments to estimate the basic model by IV – these results are reported in Table 10 for the trust index and Table 11 for the identity index.

For the trust index, Table 10 shows that the female share has a generally positive impact on workplace trust though it is not significantly different from zero when 3-digit controls are included or only 1 instrument is used. There is no significant impact of the minority share, though the estimated coefficient is always negative.

For the identity index, Table 11 shows there is no significant impact of the female share but that the minority share has a significant negative effect, much larger in the IV estimates than the OLS.

The industry-mix of a local area seems a reasonably good instrument for the female share as it is unlikely to affect directly trust and identity in a specific workplace once we control for industries and regions. Even though we do control for 3-digit industry the female share in a 4-digit industry might however be a more questionable instrument as it relates to industry characteristics that may be related to social capital. The statistical analysis however suggests that it is necessary to use two instruments to get a sufficiently strong first stage and it should be noted that the 4-digit industry female share is not significant when included as a regressor.

One of the issues one might have with these regressions is that there may be omitted plant-specific factors correlated with the female/minority share or the instruments we have used for

them. WERS also has a panel component so – for a smaller sample – we can also estimate models in first-difference form. The first column of Table 12 does this using OLS using the change in the raw averages and the second column for the change in the estimated plant effects. For trust there is a significant positive effect of female share and no effect for the minority share, in line with the levels equations. For identity the results are rather different – the difference specification finds a positive effect of the female share and no negative effect of the minority share. However the change in the shares may be endogenous so we instrument them using the change in the instruments described earlier. The first stages are reported in Table 13. For the female share the change in the industry mix instrument does not work well--unsurprising given that gender shares are very stable--while the change in the female share in the 4-digit industry works very well. For the change in the minority share, the change in the predicted minority share works well as an instrument. The third column of Table 12 reports IV estimates for the trust and identity index. A higher female share is associated with a significantly higher trust index and a higher minority share with a significantly lower identity index.

5.   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 the impacts of diversity we focus on a somewhat different set of outcomes, and pay closer attention to estimating causal effects.

We find that women and ethnic minorities as individuals have significantly higher levels of trust and identity with the firm. But the main focus of the paper is on the impact of the female and minority shares on the trust and identity of all individuals. Although we do find some significant positive effects of the female share on trust and a significant negative effect of the minority share on identity, these results are not totally robust to specification. So we would not claim that we have fully solved the problem of the existing literature of a failure to find consistent impacts of diversity.

The result that is perhaps the most consistent across specifications is the positive effect of the female share on trust that is found of a similar magnitude (around 30 to 40% of a standard deviation) in cross section OLS and IV specifications with 2-digit industry controls as well as in panel OLS and IV specifications (the latter one probably being the most convincing from

an econometric point of view). Such a result combined with the absence of a negative effect of the female share on identity may be useful from a policy perspective. It highlights 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. This result also contradicts those who argue that gender diversity can be a source of conflicts[6], or that men entrenched in traditionally male occupations may have negative stereotypes or priors against women doing similar jobs, and therefore be 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 possibly negative effect of the share of workers from an ethnic minority might be a source of concern as it highlights 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. However we do find that minorities have higher levels of trust in and identity with the firm so that employing a high share of minorities could be an attractive strategy for an employer. This discussion presumes that social capital positively affects firms' economic performance. Although we think it plausible that plants with higher levels of trust in management and higher levels of identity tend to perform better, we have not provided any evidence that this is the case. That would also be a useful topic for further research.

---

[6] 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

	Strongly disagree	disagree	Neither agree nor disagree	Agree	Strongly Agree	Mean (s.d)	Number of observations
Trust Variables							
Managers can be relied upon to keep their promises	6.8	18.2	29.6	36.0	9.4	2.23 (1.07)	34122
Managers are sincere in attempting to understand employees' views	6.1	16.2	25.1	41.8	10.8	2.35 (1.06)	34381
Managers deal with employees honestly	5.7	14.2	26.8	41.7	11.7	2.39 (1.05)	34212
Managers treat employees fairly	7.4	13.6	25.1	40.6	13.2	2.39 (1.10)	34507
Relations between managers and employees	4.2	11.8	24.7	41.3	18.1	2.57 (1.04)	34852
Identity Variables							
I share many of the values of my organization	2.2	8.1	31.3	45.8	12.5	2.58 (0.89)	34039
I feel loyal to my organization	2.5	6.7	19.5	50.3	21.0	2.80 (0.93)	34755
I am proud to tell people who I work for	3.5	7.4	26.8	40.7	21.6	2.70 (1.00)	34788

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.

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				
Managers are sincere in attempting to understand employees' views	0.7894	1			
Managers deal with employees honestly	0.7793	0.8142	1		
Managers treat employees fairly	0.7176	0.7409	0.7704	1	
Relations between managers and employees are good	0.7148	0.7447	0.7348	0.739	1

Notes: Number of observations is 33157

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		
I feel loyal to my organization	0.6292	1	
I am proud to tell people who I work for	0.5981	0.732	1

Notes: Number of observations is 33825

Table 3: Descriptive Statistics: Individual Characteristics

Variable	Mean	Std. Dev.
Female	0.57	0.50
Age<=21	0.05	0.23
Age 22-29	0.16	0.37
Age 40-49	0.27	0.44
Age 50+	0.29	0.45
Highest Qual – A level	0.29	0.45
Highest Qual – GCSE	0.19	0.39
Highest Qual – none	0.13	0.34
Ethnicity- Asian	0.04	0.20
Ethnicity – Black	0.02	0.15
Ethnicity – Other	0.01	0.08
Tenure<1yr	0.14	0.35
Tenure 1-2yrs	0.12	0.32
Tenure 5-10yrs	0.21	0.41
Tenure 10yrs+	0.28	0.45
Log Hourly Wage	2.23	0.61
Log Hours	3.45	0.55
Fixed-term contract	0.04	0.19
Temporary contract	0.04	0.20
Professionals	0.15	0.35
Associate professional	0.20	0.40
Skilled Trade	0.07	0.25
Caring, Leisure, Service Occupations	0.11	0.32
Sales and Customer Service Occupations	0.06	0.25
Operatives	0.07	0.26
Elementary Occupations	0.13	0.33

Note: Number of observations 35400

Table 4: Descriptive Statistics: Plant-Level Characteristics

	Sample Size	Mean	s.d.
Female Share of Total Employment	3361	0.531	0.290
Ethnic Minority Share of Total Employment	3361	0.077	0.148
Log Plant Employment	3361	4.364	1.709
Plant Age 0-5yrs	3361	0.097	0.296
Plant Age 6-15yrs	3361	0.237	0.426
Plant Age 16-25yrs	3361	0.212	0.409
Plant Age 25+yrs	3361	0.453	0.498
Single Plant Firm	3361	1.242	0.428
Year=2011	3361	0.530	0.500
Share Managers	3361	0.110	0.113
Share Professionals	3361	0.142	0.216
Share Associate Professionals	3361	0.110	0.195
Share Administrative Staff	3361	0.158	0.209
Share Skilled Trades	3361	0.063	0.156
Share Caring and Leisure	3361	0.109	0.243
Share Sales and Customer Service	3361	0.112	0.248
Share Operatives	3361	0.076	0.200
Share Elementary Occupations	3361	0.119	0.242
Female share in 4-digit industry	3361	0.508	0.228
Female intensity of industry in neighbourhood	3361	0.500	0.021
Trust Index	3356	3.053	0.747
Identity Index	3348	2.717	0.474

Table 5: Effect of Female/Minority Share on Trust Index: OLS and Functional Form

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Average trust index	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects
Panel A: 2-digit industry controls					
Female share	0.342 (0.069)	0.271 (0.068)	0.244 (0.070)		0.254 (0.075)
(Female share-0.5) squared			0.341 (0.189)		
Ethnic Minority Share	0.010 (0.084)	-0.105 (0.083)	-0.100 (0.154)	-0.097 (0.082)	-0.105 (0.083)
(Ethnic Minority share-0.1) sq			0.006 (0.284)		
Female share <0.2				-0.064 (0.051)	
Female share 0.2-0.4				-0.037 (0.042)	
Female share 0.6-0.8				0.054 (0.036)	
Female share >0.8				0.166 (0.042)	
Female share in 4-digit industry					0.080 (0.138)
Panel B: 3-digit industry controls					
Female share	0.213 (0.077)	0.143 (0.076)	0.123 (0.078)		0.148 (0.078)
(Female share-0.5) squared			0.237 (0.202)		
Ethnic Minority Share	-0.026 (0.085)	-0.136 (0.084)	-0.153 (0.157)	-0.130 (0.082)	-0.133 (0.084)
(Ethnic Minority share-0.1) sq			0.047 (0.288)		
Female share <0.2				-0.037 (0.055)	
Female share 0.2-0.4				-0.021 (0.045)	
Female share 0.6-0.8				0.037 (0.037)	
Female share >0.8				0.094 (0.046)	
Female share in 4-digit industry					-0.051 (0.190)

Notes:

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

	(1)	(2)	(3)	(4)	(5)
Dependent variable	Average Identity index	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects	Estimated Plant effects
Panel A: 2-digit industry controls					
Female share	0.146 (0.044)	0.109 (0.044)	0.104 (0.045)		0.134 (0.048)
(Female share-0.5) squared			0.078 (0.121)		
Ethnic Minority Share	-0.013 (0.053)	-0.156 (0.053)	-0.292 (0.098)	-0.152 (0.053)	-0.153 (0.053)
(Ethnic Minority share-0.1) sq			0.300 (0.181)		
Female share <0.2				-0.042 (0.032)	
Female share 0.2-0.4				0.001 (0.027)	
Female share 0.6-0.8				0.029 (0.023)	
Female share >0.8				0.077 (0.027)	
Female share in 4-digit industry					-0.120 (0.089)
Panel B: 3-digit industry controls					
Female share	0.090 (0.048)	0.051 (0.048)	0.060 (0.049)		0.066 (0.049)
(Female share-0.5) squared			-0.092 (0.128)		
Ethnic Minority Share	-0.032 (0.054)	-0.171 (0.053)	-0.332 (0.099)	-0.170 (0.053)	-0.169 (0.053)
(Ethnic Minority share-0.1) sq			0.345 (0.182)		
Female share <0.2				-0.054 (0.035)	
Female share 0.2-0.4				-0.012 (0.029)	
Female share 0.6-0.8				0.021 (0.023)	
Female share >0.8				0.023 (0.029)	

Female share in 4-digit industry					-0.159 (0.121)

Notes: Number of observations is 3350

Table 7

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

	Female Share		Minority Share		
	2-digit controls	3-digit controls	2-digit controls	3-digit controls	Number of Observations
Panel A: Trust Index					
Whole Sample	0.340 (0.069)	0.212 (0.077)			3350
Women	0.218 (0.085)	0.104 (0.095)	-0.184 (0.101)	-0.196 (0.104)	3055
Men	0.424 (0.099)	0.257 (0.111)	0.020 (0.117)	-0.006 (0.120)	2772
Panel B: Identity Index					
Whole Sample					3350
Women	0.074 (0.054)	-0.008 (0.060)	-0.225 (0.065)	-0.243 (0.066)	3058
Men	0.121 (0.068)	0.080 (0.077)	-0.142 (0.080)	-0.126 (0.082)	2765

Table 8

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

	Female Share		Minority Share		
	2-digit controls	3-digit controls	2-digit controls	3-digit controls	Number of Observations
Panel A: Trust Index					
Whole Sample					3350
White	0.310 (0.070)	0.183 (0.078)	-0.044 (0.093)	-0.101 (0.095)	3328
Minority	0.085 (0.201)	0.124 (0.237)	-0.077 (0.174)	-0.004 (0.184)	1017
Panel B: Identity Index					
Whole Sample					3350
White	0.145 (0.046)	0.084 (0.051)	-0.233 (0.061)	-0.264 (0.061)	3320
Minority	0.067	0.085	-0.019	0.041	1034

| | (0.136) | (0.157) | (0.118) | (0.122) | |

Table 9: First-Stage Regressions

	Female Share				Minority Share			
	(1)		(2)		(1)		(2)	
	Coeff	s.e.	Coeff	s.e.	Coeff	s.e.	Coeff	s.e.
Female share in 4-digit industry	0.763	0.025	0.599	0.035	0.001	0.023	0.001	0.034
Female intensity of neighbourhood industry composition	-0.407	0.141	-0.389	0.139	-0.178	0.133	-0.207	0.134
Predicted Minority Share	0.097	0.068	0.118	0.067	-0.404	0.064	-0.414	0.065
Log Plant Employment	-0.012	0.002	-0.009	0.002	0.010	0.001	0.010	0.002
Plant Age 0-5yrs	-0.011	0.009	-0.015	0.009	0.010	0.008	0.006	0.008
Plant Age 6-15yrs	-0.012	0.007	-0.014	0.007	0.018	0.006	0.018	0.006
Plant Age 25+yrs	0.008	0.006	0.003	0.006	-0.005	0.006	-0.001	0.006
Single Plant Firm	-0.007	0.006	0.000	0.006	0.002	0.005	0.004	0.006
Year	0.000	0.001	0.000	0.001	0.000	0.001	0.001	0.001
Share Managers	0.246	0.027	0.253	0.027	0.016	0.026	0.022	0.026
Share Professionals	0.239	0.022	0.267	0.022	0.029	0.020	0.053	0.021
Share Associate Professionals	0.249	0.021	0.264	0.022	-0.009	0.020	0.007	0.021
Share Administrative Staff	0.444	0.021	0.466	0.022	-0.010	0.020	-0.010	0.022
Share Skilled Trades	0.000	(omitted)	0.000	(omitted)	0.000	(omitted)	0.000	(omitted)
Share Caring and Leisure	0.422	0.022	0.425	0.023	0.039	0.020	0.047	0.022
Share Sales and Customer Service	0.415	0.021	0.423	0.022	0.061	0.020	0.043	0.021
Share Operatives	0.025	0.022	0.037	0.023	0.028	0.020	0.018	0.022
Share Elementary Occupations	0.258	0.021	0.246	0.022	0.064	0.019	0.036	0.021
Baseline Minority Share	0.007	0.019	-0.002	0.019	-0.026	0.018	-0.023	0.018
Baseline Log Population Density	0.000	0.002	0.000	0.002	0.027	0.002	0.025	0.002
Constant	0.288	1.536	-0.163	1.518	-0.870	1.459	-1.701	1.469
Industry controls	2-digit		3-digit		2-digit		3-digit	
Sample Size	4731				4573			
R2	0.71		0.74		0.10		0.15	

Note: dependent variable is female share in plant in first 4 columns, minority share for last 4.

Table 10

IV Estimates of the Impact of the Female/Minority Share on Trust Index

	OLS	IV – 2 instruments	IV – 1 instrument
Panel A: 2-digit industry controls			
Coefficient on Female Share	0.271 (0.068)	0.360 (0.167)	0.252 (1.43)
Coefficient on 4-digit Female Share			0.082 (1.08)
Coefficient on Minority Share	-0.105 (0.083)	-0.165 (0.880)	-0.175 (0.900)
Panel B: 3-digit industry controls			
Coefficient on Female Share	0.143 (0.076)	0.084 (0.313)	0.603 (1.23)
Coefficient on 4-digit Female Share			-0.304 (0.707)
Coefficient on Minority Share	-0.136 (0.084)	-0.157 (0.849)	-0.116 (0.860)

Number of Observations is 3358

2 instruments corresponds to the case where the 4-digit industry female share and the neighbourhood female share are used. 1 instrument corresponds only to the latter.

Table 11

IV Estimates of the Impact of the Female/Minority Share on Identity Index

	OLS	IV – 2 instruments	IV – 1 instrument
Panel A: 2-digit industry controls			
Coefficient on Female Share	0.109 (0.044)	0.003 (0.118)	0.714 (1.01)
Coefficient on 4-digit Female Share			-0.543 (0.770)
Coefficient on Minority Share	-0.156 (0.053)	-1.61 (0.620)	-1.540 (0.643)
Panel B: 3-digit industry controls			
Coefficient on Female Share	0.051 (0.048)	-0.193 (0.216)	0.908 (0.873)
Coefficient on 4-digit Female Share			-0.656 (0.511)
Coefficient on Minority Share	-0.171 (0.053)	-1.52 (0.688)	-1.43 (0.614)

Number of Observations is 3358

2 instruments corresponds to the case where the 4-digit industry female share and the neighbourhood female share are used. 1 instrument corresponds only to the latter.

Table 12: Panel Regressions: OLS and IV

| Dependent Variable	Change in Average Trust or Identity index	Change in Estimated Plant effects	Change in Estimated Plant effects
Estimation Method	OLS	OLS	IV
Panel A: Trust Index			
Coefficient on change in Female Share	0.353 (0.106)	0.291 (0.103)	0.394 (0.162)
Coefficient on change in Minority Share	0.013 (0.149	-0.140 (0.145)	-1.32 (0.602)
Number of Observations	1093	1093	1093
Panel B: Identity Index			
Coefficient on change in Female Share	0.181 (0.074)	0.136 (0.073)	0.139 (0.105)
Coefficient on change in Minority Share	0.042 (0.104)	-0.089 (0.103)	-0.738 (0.387)
Number of Observations	1404	1404	1404

Table 13: First-Stages for Panel Regression

Dependent Variable	Change in Female Share	Change in Minority Share
Female share in 4-digit industry	0.743 (0.023)	0.092 (0.021)
Female intensity of neighbourhood industry composition	-0.189 (0.234)	0.454 (0.212)
Predicted Minority Share	0.158 (0.131)	-0.601 (0.120)
Number of Observations	2019	1892
R2	0.583	0.072

Notes: other variables included are all the change in the time-varying characteristics from Table 6

Figure 1

The Female Intensity of industry in the neighbourhood: sample variation
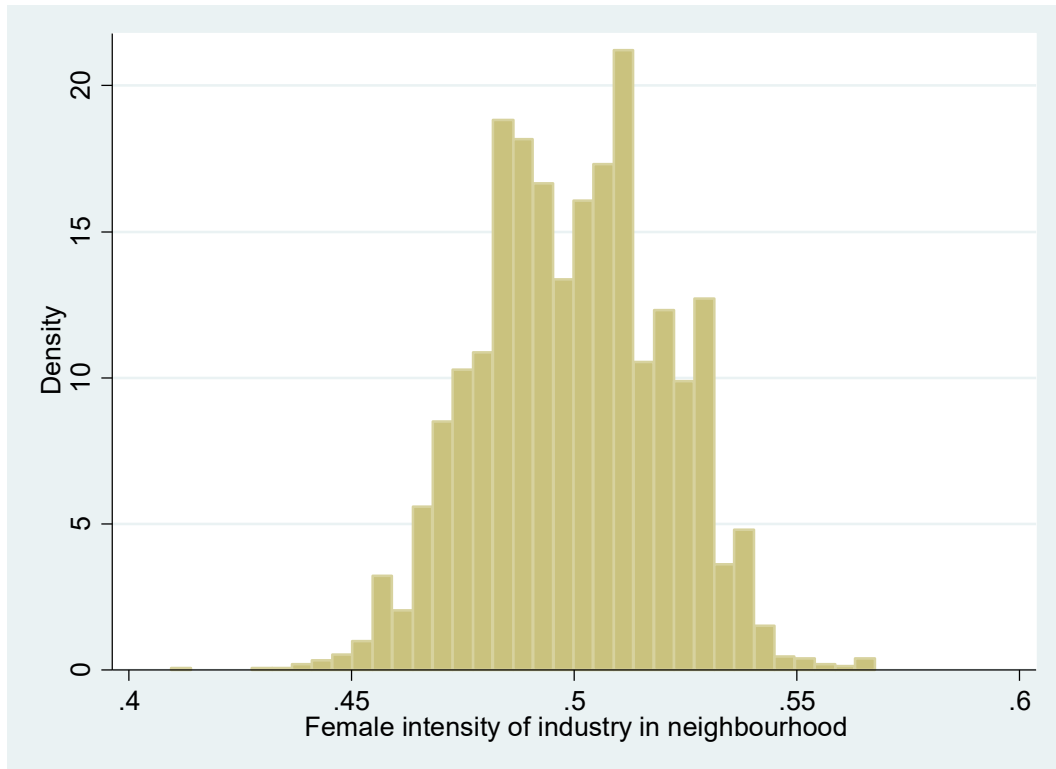
Note: sample size is 3361 plants

Appendix

Table A1: Results of Individual-Level Regressions: Trust and Identity Index

	Trust Index		Identity Index	
	Coeff	s.e.	Coeff	s.e.
Female	0.038	0.016	0.089	0.011
Age<=21	0.059	0.033	-0.038	0.024
Age 22-29	-0.017	0.021	-0.050	0.014
Age 40-49	-0.006	0.018	0.017	0.012
Age 50+	0.039	0.019	0.081	0.013
Highest Qual – A level	0.063	0.018	0.044	0.012
Highest Qual – GCSE	0.072	0.020	0.027	0.014
Highest Qual – none	0.190	0.025	0.095	0.017
Ethnicity- Asian	0.092	0.035	0.200	0.024
Ethnicity – Black	0.109	0.047	0.165	0.032
Ethnicity – Other	0.042	0.081	0.017	0.057
Tenure<1yr	0.432	0.022	0.140	0.015
Tenure 1-2yrs	0.188	0.022	0.039	0.016
Tenure 5-10yrs	-0.083	0.019	-0.021	0.013
Tenure 10yrs+	-0.123	0.019	-0.032	0.013
Log Hourly Wage	0.061	0.016	0.101	0.011
Log Hours	-0.023	0.015	0.085	0.011
Fixed-term contract	0.085	0.036	0.006	0.025
Temporary contract	0.077	0.035	-0.016	0.024
Professionals	-0.004	0.028	0.032	0.019
Associate professional	-0.027	0.022	0.002	0.015
Skilled Trade	-0.238	0.034	-0.155	0.024
Caring, Leisure, Service Occupations	-0.079	0.030	0.018	0.021
Sales and Customer Service Occupations	0.014	0.038	0.028	0.026
Operatives	-0.267	0.035	-0.174	0.024
Elementary Occupations	-0.106	0.029	-0.087	0.020
Constant	2.863	0.084	2.081	0.058
Number of obs	33157		33825	

References

Adams, R. B. & Ferreira, D. 2009. Women in the boardroom and their impact on governance and performance. *Journal of Financial Economics*, 94: 291–309.

Ahern, Kenneth, and Amy Dittmar, 2012, "The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation", *Quarterly Journal of Economics*, 127, 137-97.

Alesina, Alberto and Eliana La Ferrara, 2002, "Who Trusts Others?", *Journal of Public Economics*, 87, 207-234.

Alesina, Alberto, Reza Baqir and William Easterly, 1999, "Public Goods and Ethnic Divisions", *Quarterly Journal of Economics*, 114, 1243-1284.

Alesina, Alberto and Eliana La Ferrara, 2005, "Ethnic Diversity and Economic Performance", *Journal of Economic Literature*, 43, 762-800.

Algan, Yann and Pierre Cahuc, 2010. "Inherited Trust and Growth", *American Economic Review,* 100, 2060-92.

Andrevski, Goce , Orlando C. Richard, Jason D. Shaw, and Walter J. Ferrier, 2014, "Racial Diversity and Firm Performance: The Mediating Role of Competitive Intensity", *Journal of Management*, 40: 820-844,

Andrews, R. 2009. "Civic Engagement, Ethnic Heterogeneity and Social Capital in Urban Areas: Evidence from England", Urban Affairs Review, vol. 44, no. 3, pp. 428-440.

Becares L., Stafford M., Laurence J., and Nazroo, J. 2011. "Composition, concentration and deprivation: Exploring their association with social cohesion among different ethnic groups in the UK", Urban Studies, vol. 48, no. 13, pp. 2771–2787.

Bertrand, Marianne, Sandra E. Black, Sissel Jensen and Adriana Lleras-Muney", 2104 "Breaking the Glass Ceiling? The Effect of Board Quotas on Female Labor Market Outcomes in Norway", National Bureau of Economic Research Working Paper", 20256

Card, David 2001, "Immigrant Inflows, Native Outflows, and the Local Labor Market Impacts of Higher Immigration", Journal of Labor Economics, vol. 19, pp. 22-64

Cox, T., Lobel, S., & McLeod, P. 1991. "Effects of ethnic group cultural differences on cooperative and competitive behavior on a group task". *Academy of Management Journal*, 34: 827-847.

Croson, Rachel and Uri Gneezy. 2009. "Gender Differences in Preferences." *Journal of Economic Literature,* 47, 448-74

Dale-Olsen, H., P. Schøne, and M. Verner. 2014. "Diversity among Directors: The Impact on Performance of a Quota for Women on Company Boards". *Feminist Economics*, 19, 110–35.

Demireva, Neli and Anthony Heath, 2014. "Diversity and the Civic Spirit in British Neighbourhoods: An Investigation with MCDS and EMBES 2010 Data". *Sociology*, 48, 643-662.

Dezsö, Cristian L., and David Gaddis Ross. 2012. "Does Female Representation in Top Management Improve Firm Performance? A Panel Data Investigation." *Strategic Management Journal*, 33, 1072–89.

Dinesen, P.T. and Sonderskov, K.M. 2012. "Trust in a Time of Increasing Diversity: On the Relationship between Ethnic Heterogeneity and Social Trust in Denmark from 1979 until Today", *Scandinavian Political Studies*, vol. 35, no. 4, pp. 273–294.

Easterly, William and Ross Levine, 1997, "Africa's Growth Tragedy: Policies and Ethnic Divisions", *Quarterly Journal of Economics*, 112, 1203-1250.

Eckbo, B. Espen, Knut Nygaard, and Karin S. Thorburn. 2015. Do Board Quotas Reduce Firm Value? Working paper, Tuck School of Business, Dartmouth College, Hanover, NH.

Ely, R., 2004, "A Field Study of Group Diversity, Participation in Diversity Education Programs, and Performance," *Journal of Organizational Behavior*, 25, 755–780.

Ferreira, D. 2010. Board diversity. In R. Anderson & H. K. Baker (Eds.), "*Corporate governance: A synthesis of theory, research, and practice*": 225–242. Hoboken, NJ: John Wiley & Sons.

Fieldhouse, E. and Cutts, D. 2010. "Does Diversity Damage Social Capital? A Comparative Study of Neighbourhood Diversity and Social Capital in the US and Britain." *Canadian Journal of Political Science-Revue Canadienne de Science Politique*, 43, 289-318.

Ellison, Sara Fisher and Wallace Mullin (2014) "Diversity, Social Goods Provision, and Performance in the Firm", *Journal of Economics & Management Strategy*,23, 465-481.

Forth, John and McNabb, Robert, 2008, "Workplace Performance: A Comparison of Subjective and Objective Measures in the 2004 Workplace Employment Relations Survey", *Industrial Relations Journal*, 39, 104-123.

Joshi, A. and H. Roh, 2009, "The Role of Context in Work Team Diversity Research: A Meta-Analytic Review," *Academic of Management Journal*, 3, 599–627.

Knack, Stephen and Philip Keefer, 1997, "Does Social Capital Have an Economic Payoff? A Cross-Country Investigation", *Quarterly Journal of Economics*, 112, 1251-1288.

van Knippenberg, Daan and Michaela C. Schippers, 2007. "Work Group Diveristy", *Annual Review of Psychology*, 58, 515-541.

Langella, Monica and Alan Manning, 2016. "Diversity and Neighbourhood Satisfaction", Centre for Economic Performance, LSE.

Laurence, J. 2011. "The Effect of Ethnic Diversity and Community Disadvantage on Social Cohesion: A Multi-Level Analysis of Social Capital and Interethnic Relations in UK Communities." *European Sociological Review*, vol. 27.

Laurence, J. and A. Heath, 2008. "Predictors of Community Cohesion: Multi-Level Modelling of the 2005 Citizenship Survey." Department for Communities and Local Government, London.

Leonard, J. S., Levine, D. I., & Joshi, A. 2004. "Do birds of a feather shop together? The effects on performance of employees' similarity with one another and with customers", *Journal of Organizational Behavior*, 25, 731–754.

Letki, N. 2008. "Does Diversity Erode Social Cohesion? Social Capital and Race in British Neighbourhoods.", *Political Studies*, 56, 99-126.

Manning, Alan and Roy, Sanchari, 2010, "Culture Clash or Culture Club? National Identity in Britain", *Economic Journal*, 120, F72-F100.

Matsa, David A., and Amalia R. Miller, 2013. "A Female Style in Corporate Leadership? Evidence from Quotas" *American Economic Journal: Applied Economics*, 5, 136-69.

Miguel, Edward (2004) "Tribe or Nation? Nation Building and Public Goods in Kenya versus Tanzania", *World Politics*, 56, 327-362.

Nandi, Alita and Platt, Lucinda, 2015, "Patterns of minority and majority identification in a multicultural society", *Ethnic and Racial Studies*, 38, 2615-2634.

Noland, Marcus, Tyler Moran and Barbara Kotschwar, 2016, "Is Gender Diversity Profitable? Evidence from a Global Survey" Peterson Insitute for International Economics, February 2016

Portes, A. and Vickstrom, E. 2011. "Diversity, Social Capital, and Cohesion", *Annual Review of Sociology*, 37, 461-479.

Putnam, R. D., 2000, "*Bowling Alone: The Collapse and Revival of American Community*", New York: Simon and Schuster.

Putnam, Robert D., 2007, "E Pluribus Unum: Diversity and Community in the Twenty-first Century", *Scandinavian Political Studies*, 30, 137-174.

O'Reilly, Charles A. III, and Brian G. M. Main. 2012. Women in the Boardroom: Symbols or Substance? Stanford Graduate School of Business Research Paper 2098, Stanford, CA.

Ozgen, Ceren, Peter Nijkamp and Jacques Poot, 2011a "Immigration and Innovation in European regions", IZA Discussion Paper No. 5676.

Ozgen, Ceren Peter Nijkamp and Jacques Poot, 2011b "The Impact of Cultural Diversity on Innovation: Evidence from Dutch Firm-Level Data", IZA Discussion Paper No. 6000.

Ottaviano, Gianmarco I.P. and Giovanni Peri, 2006, "The Economic Value of Cultural Diversity: Evidence from US Cities", *Journal of Economic Geography*, 6, 9-44.

Pande, Rohini, and Deanna Ford. 2011. Gender Quotas and Female Leadership: A Review. Background paper for the 2012 World Development Report: Gender Equality and Development. Washington: World Bank.

Portes, A. and E. Vickstrom, 2011, "Diversity, Social Capital, and Cohesion," *Annual Review of Sociology*, 37, 461–479.

Richard, Orlando C. , Susan L. Kirby , Ken Chadwick, 2013, "The impact of racial and gender diversity in management on financial performance: how participative strategy making features can unleash a diversity advantage", *International Journal of Human Resource Management*, 24, 2571-2582.

Sapienza, Paola, Luigi Zingales, and Dario Maestripieri, 2009, "Gender Differences in Financial Risk Aversion and Career Choices are Affected by Testosterone", *Proceedings of the National Academy of Sciences*, 106, 15268–73.

Sturgis P, Brunton-Smith I, Read S, Allum N, 2011. "Does ethnic diversity erode trust? Putnam's `hunkering-down' thesis reconsidered''. *British Journal of Political Science*, vol. 41, 57-82.

Tesei, A. 2014. "Trust, Racial Fragmentation and Income Inequality: New Evidence from the U.S.". CESifo Working Paper n. 4718.

Twigg, L., Taylor, J., & Mohan, J. 2010."Diversity or disadvantage? Putnam, Goodhart, ethnic heterogeneity, and collective efficacy", *Environment and Planning A*, 42, 1421-1438.

Uslaner, Eric M., 2002, "*The Moral Foundations of Trust*", Cambridge: Cambridge University Press.

Uslaner, Eric M., 2012, "*Segregation and Mistrust: Diversity, Isolation, and Social Cohesion*", Cambridge : Cambridge University Press.

Van der Meer, T. and Tolsma, J., 2014, "Ethnic Diversity and its Effects on Social Cohesion", *Annual Review of Sociology*,40, 459-478.

Williams, K. and C. O'Reilly, 1998, "Demography and Diversity in Organizations: A Review of 40 Years of Research," *Research in Organizational Behavior*, 20, 77–140.

CENTRE FOR ECONOMIC PERFORMANCE
Recent Discussion Papers

1459	Monica Langella Alan Manning	Diversity and Neighbourhood Satisfaction
1458	Giordano Mion Luca David Opromolla Alessandro Sforza	The Diffusion of Knowledge via Managers' Mobility
1457	Kristian Behrens Giordano Mion Yasusada Murata Jens Suedekum	Distorted Monopolistic Competition
1456	Tony Beatton Michael P. Kidd Stephen Machin Dipa Sarkar	Larrikin Youth: New Evidence on Crime and Schooling
1455	Andrew Eyles Stephen Machin Sandra McNally	Unexpected School Reform: Academisation of Primary Schools in England
1454	Rabah Arezki Thiemo Fetzer Frank Pisch	On the Comparative Advantage of U.S. Manufacturing: Evidence from the Shale Gas Revolution
1453	Randolph Bruno Nauro Campos Saul Estrin Meng Tian	Foreign Direct Investment and the Relationship Between the United Kingdom and the European Union
1452	Stephen J. Redding Esteban Rossi-Hansberg	Quantitative Spatial Economics
1451	Elias Einiö	The Loss of Production Work: Evidence from Quasi-Experimental Identification of Labour Demand Functions
1450	Marcus Biermann	Trade and the Size Distribution of Firms: Evidence from the German Empire

1449	Alessandro Gavazza Simon Mongey Giovanni L. Violante	Aggregate Recruiting Intensity
1448	Emmanuel Amissah Spiros Bougheas Fabrice Defever Rod Falvey	Financial System Architecture and the Patterns of International Trade
1447	Christian Fons-Rosen Vincenzo Scrutinio Katalin Szemeredi	Colocation and Knowledge Diffusion: Evidence from Million Dollar Plants
1446	Grace Lordan Jörn-Steffen Pischke	Does Rosie Like Riveting? Male and Female Occupational Choices
1445	Stephen J. Redding David E. Weinstein	A Unified Approach to Estimating Demand and Welfare
1444	Anna Valero John Van Reenen	The Economic Impact of Universities: Evidence from Across the Globe
1443	Marta De Philippis	STEM Graduates and Secondary School Curriculum: Does Early Exposure to Science Matter?
1442	Thierry Mayer Marc J. Melitz Gianmarco I.P. Ottaviano	Product Mix and Firm Productivity Responses to Trade Competition
1441	Paul Dolan Georgios Kavetsos Christian Krekel Dimitris Mavridis Robert Metcalfe Claudia Senik Stefan Szymanski Nicolas R. Ziebarth	The Host with the Most? The Effects of the Olympic Games on Happiness