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Does Performance Pay Reduce the Gender Time Gap?

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Abstract: Using German survey data, we show that performance pay is associated with a substantially lower gender hours gap. While performance pay increases the work hours of both men and women, the increase is much larger for women than for men. This finding persists in worker fixed effects estimates. We argue our finding likely reflects differences in household production and specialization by gender. Thus, we show that performance pay is not associated with hours increasing for men with children in the household. Yet, performance pay is associated with a very large increase in hours for women with children in the household.

Keywords: Performance Pay, Contracted Hours, Actual Hours, Gender.

JEL Codes: D10, J22, J33, M52.

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1. Introduction

The gender gap in labor market opportunities plays a key role in the policy debate in many countries (European Commission 2016, United Nations Human Rights Council 2011, United Nations Office at Geneva 2016 and World Bank 2012). While education and labor force participation of women have increased, women continue to face various labor market disadvantages. There remains a substantial gender wage gap (Blau and Kahn 2017). Moreover, evidence from various countries shows that there also exists a substantial gender time gap. While the extent of the gender time gap may vary from country to country, the basic point is that women on average work less hours than men in all the countries examined (Campana et al. 2023, Doan et al. 2021, Duval-Hernández et. al. 2023, Jackman and Kishmar 2021, Landivar 2015, Männasoo 2022).

This gives rise to the question of what drives the gender time gap, and which factors contribute to reducing the gap. Our study examines the role of performance pay. The use of performance pay has spread among firms in the United States and in many European countries (Bender and Skatun 2022, Lemieux et al. 2009, Zwysen 2021). Performance pay is often thought to induce higher effort as it aligns workers' interests to those of the employer (Prendergast 1999). Considering greater work hours as one component of the effort response, a fledgling literature has begun to examine the link between performance pay and work hours. However, as we will make clear, the underlying studies have provided mixed results. This may reflect that the influence of performance pay on working hours is heterogeneous and depends on circumstances and type of worker. Most salient to our topic, those studies have not systematically examined whether the link between performance pay and working hours differs between men and women.

We provide a unique study showing that the link between performance pay and hours of work indeed differs substantially by gender. Using data from the German Socio-Economic Panel (SOEP), we show that the hours response to performance pay is much larger and more consistent for women than for men. This has not been shown before. Our key finding holds in both random effects and fixed effects estimations and implies that the gender time gap is substantially smaller among workers receiving performance pay. This finding is consistent with the well-known greater labor supply responsiveness of women and, as such, may reflect continued gender specialization.

To further explore this interpretation, we examine workers with and without children recognizing that children are associated with increased home production. Within households without children, both men and women modestly increase their hours of work when receiving performance pay. By contrast, within households with children, the work hours of men appear insensitive to the presence of performance pay whereas the hours of women are highly sensitive to performance pay. This shows that particularly women with children substitute work hours for household production implying that performance pay particularly lowers the gender time gap among workers with children.

In what follows, the next section provides the background discussion. The third section introduces our data and methodology. The fourth section presents the empirical results. The final section concludes and discusses the implications of our findings.

2. Background Discussion

2.1 Previous Research on Performance Pay and Work Hours

Performance pay measures (either objectively or subjectively) elements of performance and link worker compensation to those measures. At its best, performance pay aligns the interests of workers with those of the firm (Prendergast 1999). Indeed, a series of studies show that

performance pay increases productivity (Banker et al. 1996, Cadsby et al. 2007, Dohmen and Falk 2011, Gielen et al. 2010, Heywood et al. 2011, Jirjahn 2016, Lavy 2009, Lazear 2000, Paarsch and Shearer 2000, Shaw 2015, Shearer 2004). There is also ample evidence that performance pay is linked to higher wages (Booth and Frank 1999, Green and Heywood 2016, Heywood and Parent 2012, Jirjahn and Stephan 2004, Parent 1999, Pekkarinen and Ridell 2008, Seiler 1984). These findings reflect that performance pay rewards both higher ability and increased effort of workers.

However, it is an open question of whether performance pay has an influence on workers' hours. From a theoretical viewpoint, there can be opposing influences. On the one hand, greater hours may be viewed as one component of workers' effort response to performance pay. On the other hand, increased worker effort does not necessarily mean an increase in hours. It could reflect working faster, harder or smarter rather than simply working longer. Taking the standard labor supply model into account, the increased earnings opportunities associated with performance pay involve both a substitution and an income effect. Depending on which of the two effects dominates workers may increase or decrease their hours. Workers will respond with greater hours only if the substitution effect dominates, but not if the income effect dominates.

Only a relatively small number of empirical studies have examined the link between performance pay and work hours. These provide mixed results. Studies of agricultural workers in California find that piece rates increase productivity without additional hours which the authors attribute to working harder and smarter (Billikopf and Norton 1993, Billikopf 1995). Similarly, for Florida, Ku (2019) presents evidence that for piece rate agricultural workers "hours worked are not really the workers' choice variable whereas effort or work intensity is."

By contrast, Fehr and Goette (2007) find evidence of a positive hours response for bicycle messengers in Zurich, Switzerland. An increase in the commission rate paid to the messengers

(i.e., a higher intensity of performance pay) leads them to increase their work hours. Examining teachers in the US, Jones (2013) shows that the type of performance pay plays a role. Teachers' hours tend to increase with individual performance pay, but not with group performance pay. DeVaro (2022) uses UK linked establishment-worker data to show that performance pay increases the likelihood of working long hours but only if the cut-off is modest (35 to 39 hours). This result might best be summarized as performance pay increasing the likelihood of working full time instead of part-time.

The literature also provides mixed results as to the question of whether worker sorting plays a role in the link between performance pay and work hours. Green and Heywood (2023) illustrate with individual data from the UK that large initial hours estimates are greatly attenuated by worker fixed effects estimates that hold worker sorting constant. By contrast, using US survey data, Artz and Heywood (2024) find a substantial hours response to performance pay even in worker fixed effects estimation.

Most salient to our topic, the studies on performance pay and work hours have paid almost no attention to possible gender differences. In the US study, Artz and Heywood (2024) just briefly describe that they could not find meaningful differences by gender in the hours response to performance pay. Yet, there remain reasonable theoretical expectations that such differences could exist, and it is useful to identify these expectations.

2.2 Performance Pay and Gender

A series of experimental studies suggest that women and men's efforts respond similarly to different variants of performance pay across a wide range of contexts (Bandiera et al. 2021). However, the hours response to performance pay was not among the effort measures examined.

Different hours responses can be expected if one considers traditional gender roles. These gender roles involve women disproportionately responsible for household and family tasks even when they work. While men are primary earners, women are secondary earners who are less attached to the labor market. Home specialization has been thought to make women's labor supply more responsive to outside earnings. Traditional gender roles lead women to substitute among work, home production, and leisure whereas men primarily substitute between work and leisure. A series of studies for the US and Europe indeed find that the labor supply of women is much more sensitive to wages at both the extensive and intensive margins (Bargain and Peichel 2016, Heckman 1993, Killingsworth and Heckman 1987, Smith 1980). Thus, to the extent that performance pay increases earnings opportunities, women are likely to respond with more additional hours than would men. This can be particularly expected when there are children in the household increasing women's responsibility for family.

One may question whether such asymmetric gender roles remain in recent times. Over the last decades, the wage labor supply elasticities of women have declined in the US and Europe implying smaller gender differences in labor supply (Bargain and Peichel 2016). This may indicate a change in gender roles. However, even though gender asymmetries have decreased, they have not completely disappeared. Fortin (2005, 2015) finds that traditional gender role attitudes still play a role in women's labor force participation. Time use studies show that women on average spend much more time on childcare and homecare than men even when they work (Bredtmann 2014, Craig and Mullan 2010, Ferrant et al. 2014, Garcia et al. 2011, Sellach and Libuda-Köster 2017). Reflecting their disproportionate responsibility for household production, women experience more psychological strain from combining work and family than men (DGB 2017, Klünder and Meier-Gräwe 2017, Ross and Mirowsky 1988). Finally, there is evidence that the

well-known gender gap in job burnout is largely driven by women with traditional views of their role in society (Artz et al. 2022). Thus, to the extent asymmetric gender roles still exist, they can be expected to lead to differential hours responses to performance pay.

Of course, a differential hours response may also depend on whether the earnings opportunities associated with performance pay differ for men and women. On the one hand, there are concerns that the discretionary nature of the evaluations underlying performance pay implies that superiors' prejudices towards women will enter the process of performance measurement resulting in a gender bias (Maas and Torres-Gonzalez 2011). On the other hand, performance pay may help women overcome statistical discrimination so they can improve their earnings opportunities. Statistical discrimination occurs when employers have imperfect information about individual workers' productivity and, therefore, use information about a group's productivity to pay them (Arrow 1973, Phelps 1972). Improving information about individual worker productivity reduces the necessity to use group information (Lozano et al. 2023). Performance pay may be an opportunity for women to prove to their employers that they are not less productive than men. This provides an additional incentive to work longer hours under performance pay.

3. Data and Variables

Our empirical analysis uses data from the SOEP, a large representative longitudinal survey of private households in Germany (Goebel et al. 2019). Routine socio-economic and demographic questions are asked annually. Different 'special' topic questions appear in specific waves. Information on performance pay is available in the waves 2004, 2008, 2011 and 2016. We pool the four waves for our panel data analysis. The analysis focuses on workers aged 18 to 60 years. This reflects the typical working age population in Germany. We exclude apprentices, interviewees

reporting zero working hours and marginally employed individuals (monthly earnings of below 450 Euros). These employees are unlikely to face a choice of sorting into performance pay.

Table 1 provides the definitions and descriptive statistics of our key variables. Gender is the key topic of our study. In our initial regressions, we will use the combined sample of male and female workers and include a dummy for women to examine the extent of the gender time gap in our data. In the subsequent steps, we will provide separate estimations for men and women to examine if the link between performance pay and working hours depends on the worker's gender. These separate estimations provide insights into the question of whether performance pay reduces the gender gap in working hours.

Our variable for individual performance pay builds from a two-stage question asking first if the employee is subject to regular and formalized performance appraisals by a superior. Second, if the employee answers in the affirmative, he or she is asked whether the performance appraisal has consequences for his or her earnings. Building from Cornelissen et al. (2011) and Grund and Sliwka (2010), our dummy for performance pay is equal to 1 if an employee is subject to performance appraisal and the performance appraisal has any consequences for the employee's earnings. In our sample, 27 percent of employees receive performance pay.

We use two dependent variables – the log of the contracted weekly hours and the log of the actual weekly hours. The latter variable also accounts for overtime hours. Table 2 provides simple mean comparisons to examine if workers with and without performance pay differ in their working hours. The comparisons with the combined sample of male and female workers in Panel A show that workers receiving performance pay indeed work significantly more hours. Workers on performance pay have approximately 8.3 percent more contracted and 10.5 percent more actual

work hours than workers who are not on performance pay.[1] However, the combined sample of male and female workers hides a far richer pattern.

The separate comparisons for men and women in Panel B and Panel C make clear that performance pay plays a much more pronounced role in hours differences among women than among men. For female workers, performance pay is associated with 10.5 percent more contracted hours and 12.7 percent more actual hours. By contrast, for male workers, performance pay is only associated with 1.0 percent more contracted and 2.0 percent more actual hours. Altogether, this pattern provides initial evidence that performance pay may have a much stronger influence on the working hours of women than on the working hours of men. At issue is whether this also holds in multivariate analyses that account for other factors influencing working hours.

The SOEP allows including a rich set of control variables. Appendix Table A1 shows the definitions and descriptive statistics. Variables for a permanent contract, tenure, work experience, firm size, occupation, industry and public versus private sector employment capture work-related factors. Furthermore, we include variables for years of schooling, age, migration background, marital status, number of children and size of the household to account for the socio-demographic background. We also control for risk attitude and personality traits (locus of control and the Big Five). Finally, a regional dummy for East Germany and variables for the year of observations are included.

4. Results

4.1 Initial Estimates

Table 3 presents the initial estimates on the combined gender study. The determinants of the log of the contracted and the actual weekly hours are estimated using random effects (RE) and fixed effects (FE) regressions. The RE and the FE model both decompose the error term of a regression

into two parts, a time-varying component, and an individual-specific time-invariant component. The two models differ in their distributional assumptions. The RE model requires that the individual-specific component is uncorrelated with the explanatory variables. By contrast, the FE model allows for any correlations between the individual-specific component and the explanatory variables. It accounts for possible endogeneity that is due to unobserved time-invariant factors. Thus, the FE model may be more suited to address a possible self-selection of workers on unobserved time-invariant factors. However, this does not come without a cost. While the RE model uses both the within and between variation in the variables, the FE model only uses the within variation contained in the data. The focus on only within variation implies that time-invariant variables cannot be included, and singleton observations are not considered in an FE regression. As our unbalanced dataset contains singleton observations, the number of observations for the FE regressions in columns (3) and (6) is smaller than the number of observations for the RE regressions in columns (1) and (4). As a matter of comparison, we also present RE regression without singleton observations in columns (2) and (4).

Many of the control variables emerge with significant coefficients with a series of results being remarkably robust across estimation samples and regression models. Workers on permanent contract, with more years of experience, greater education and in larger firms work more hours. Workers who are married, have children in the household or are more agreeable work less hours on average. Some controls such age, public sector employment, locus of control and residence in East Germany take significant coefficients only in the RE regressions perhaps reflecting small within worker variation.

Most salient to our topic, performance pay is a significantly positive determinant of hours in all regressions. Considering the RE regressions with the full estimation sample, performance

pay is associated with 2.4 percent more in contracted hours and 2.8 percent more in actual hours.[2] Limiting the observations to workers for whom we have two or more years of observations does not change the pattern of results. Finally, the FE regressions examine the consequences of a change in the independent variables on changes in hours of work for a given worker. These within worker estimates show only a modest attenuation of the role of performance pay. As a worker moves into a job with performance pay their contractual and actual hours increase around 2 percent (1.8 percent and 2.2 percent). These significant results suggest that the link between performance pay and hours is not simply driven by a self-sorting of workers with a high propensity of working more hours into performance pay. The fixed effects results make clear that increased hours rather stand as one effort dimension that responds to performance pay.

As the variable for gender is time-invariant, we cannot include it in the FE, but only in the RE estimations. These estimations show a large gender time gap. The coefficients imply 20.3 percent fewer contracted hours and 21.2 percent fewer actual hours for women. Limiting the observations to workers for whom we have two or more years of observations does not change the pattern of results. At issue now is whether performance pay has an influence on the gender time gap.

4.2 Differential Hours Responses to Performance Pay by Gender

Table 4 shows separate estimations by gender to examine whether the working hours of men and women respond differently to performance pay. While performance pay is associated with significantly more contracted and actual hours for both men and women, there are large quantitative differences in this association by gender. For men, the hours response is small at a 1 percent increase. For women, the hours response is many times larger. Women on performance pay work 4.6 percent more contracted hours and 5.0 percent more actual hours. The fixed effects

estimates remain highly significant and suggest that women who move into a performance pay job work 3.1 percent more contracted and 3.6 percent more actual hours because of the move.

While this clearly suggests that the gender time gap shrinks when performance pay is received, we now move to directly estimating that gap. Table 5 presents hours estimates that separate the sample by the presence of performance pay rather than by gender. Columns (1) and (2) show RE results for the full sample. The gender time gap in contracted hours is 16.6 percent less than for men in the performance pay sector. This contrasts with a gender time gap of 20.9 percent outside the performance pay sector. This difference of 4.3 percent represents a reduction in the gender time gap of nearly 21 percent. As shown in columns (6) and (7), the reduction in the gender time gap for actual hours is broadly similar with 22.0 percent fewer hours for women outside the performance pay sector becoming 17.1 percent fewer hours for women inside the performance pay sector, a reduction of 22.3 percent.

Columns (3) and (8) return to the combined gender sample and present RE regressions additionally including an interaction of women with performance pay. While performance pay does not take a significant coefficient in these regressions, the gender dummy emerges with a significantly negative coefficient and the interaction variable with a significantly positive coefficient. The estimation confirms a large gender time gap that is reduced significantly by performance pay. Receipt of performance pay is associated with 5.3 percent more contracted and 5.7 percent more actual work hours for women than for men, a closing of the gap. Dropping singleton observations from the estimation sample in columns (4) and (9) does not change the pattern of results. Finally, columns (5) and (10), provide FE estimations. Here the time-invariant gender dummy obviously drops out, but the interaction of performance pay with gender remains. While the estimated coefficients on the interaction variable are somewhat smaller than in the RE

regressions, the FE estimations confirm the basic story. Performance pay plays very little role in increasing the hours of men but a significant role in increasing the hours of women. The result is a clear reduction in the gender hours gap associated with performance pay. This pattern remains with a 3.0 percent increase for contracted and a 3.5 percent increase for actual hours of work.

4.3 The Moderating Role of Children

Having confirmed a differential hours response to performance pay by gender, we now explore in more detail where that arises. The demands of performance pay jobs likely require women to reallocate hours that would have been used in home production. Again, women retain far greater home production responsibilities. We take children in the household as an indicator of the presence of home production for which women are disproportionately responsible. At the same time, children have been repeatedly shown to be associated with increased labor force attachment for men. Thus, for men with children the demands of a performance pay jobs may not differ substantially from the labor market effort they already put forth. Thus, we anticipate larger gender differences in response to performance pay when children are present.

Table 6 continues the gender split seen earlier but also further splits the sample by whether children are present in the household. The top panel contrast men with and without children in their household. For men with children in their household there is no indication that performance pay is associated with greater hours. The coefficients are routinely small, insignificant, and even sometimes negative. The results for men without children show a small but positive increase in hours. The fixed effects estimates indicates that these men increase their hours of work 1.4 percent upon moving to a performance pay job.

The second panel contrasts women with and without children in their household. For women with children in their household, the estimates are very large. Women moving from a job

without performance pay to one with performance pay increase their contracted hours approximately 6.4 percent and their actual hours by approximately 7.3 percent. These FE estimates are very similar to the RE estimates. The estimates are substantially larger than those for women without children in their household. While statistically significant, these women increase their contracted hours approximately 3.0 percent and their actual hours 3.6 percent in the RE estimates. This is attenuated in the FE estimates which show a 1.9 percent increase in actual hours upon moving into a performance pay job. This estimate is much close to the 1.4 percent increase for men.

Thus, it remains the case that women are more sensitive to performance pay than men. Yet, the presence of children greatly increases this sensitivity. Their hours increase much more when moving into performance pay jobs when they have children in the household. At the same time, the presence of children makes men less sensitive to performance pay. Indeed, a significant hour influence could not be identified. This highlights the importance of home production (done largely by women) and specialization as a determinant of gender differences in the response to performance pay.

Next, we again focus on the consequences for the gender hours gap. To do this we reproduce the last three columns of Table 5 separately for those workers with and without children in the household. Table 7 provides the results. The top panel shows the results for those with children. First, as might be expected the known specialization associated with children emerges. The gender hours gap grows substantially. Those women who continue to work with children work substantially fewer hours compared to men. They work 33.0 percent fewer hours. Second, performance pay is associated with increased work hours but only for women. Performance pay is associated with 7.3 percent greater hours of work for women than for men. Performance pay closes

the gender hours gap for workers with children. Third, the fixed effects estimate does not attenuate this influence at all. The fixed effects estimate indicates that when women with children move into a performance pay job, their hours increase by 7.6 percent. The estimates are very similar for actual hours. This reduction of 7.6 percent on an original gap of 33 percent suggests that performance pay closes about 23 percent, almost a quarter, of the gender hours gap.

The second panel repeats the estimates for those workers without children in the household. Again, as expected the gap in hours between men and women is smaller, at 12.2 percent fewer hours. The role of performance pay in increasing hours for women is also smaller. It remains statistically significant in the RE estimates but is not statistically different from zero in the FE estimates for either contracted or actual hours. Moreover, the point estimate is only 40 percent of what it was for workers with children.

Thus, the estimates suggest that the hours of women workers are more influenced by performance pay and that, within women workers, the influence is concentrated among those with children. This likely reflects that the demand of performance pay require substitution away from household production that men do not make.

5. Conclusion

Firms make increasing use of performance pay. This gives rise to the question of how performance pay influences the various gender gaps in labor market outcomes. Our study uses German data to show that performance pay is associated with a substantially lower gender hours gap. While both the hours of men and women increase under performance pay, the increase is substantially larger for women. The increase in hours for women is between three and four percent whereas that for men is only between one and two percent. Controlling for worker fixed effects attenuates these estimates only modestly. This has the anticipated influence on the gender hours gap. Our separate

estimates by gender indicate that performance pay is associated with over a 20 percent reduction in the gap. We interpret this as suggesting that increased demands of performance pay jobs cause women to give up valuable home production, a trade-off that men do not face as fully.

To further explore this interpretation, we examined households with children recognizing that children are associated with increased home production. This focus increased the observed differences by gender. Within households without children, both men and women modestly increase their hours of work when receiving performance pay. Indeed, the fixed effects estimates show remarkably similar increases in hours by gender when moving into a performance pay job. Within households with children, the work hours of men appear insensitive to the presence of performance pay. The hours of women are much more sensitive to performance pay with an estimated increase of 7.3 percent. This increased difference by gender has the anticipated influence on the gender hours gap. The difference in hours associated with performance pay does not significantly differ for those in households without children in fixed effects estimates. The gap associated with performance pay closes by around 7.6 percent or almost a quarter of gender hours gap for those in households with children.

We recognize the competing policy implications of our findings. On the one hand, our findings suggest that performance pay has the potential to promote gender equality in the labor market. On the other hand, a series of studies have shown that performance pay has adverse consequences for workers' health. Performance pay is associated with a long list of physical and mental health problems and with an increase in alcohol and drug use (Andelic et al. 2024, Artz et al. 2021, Baktash et al. 2022a, 2022b, Cadsby et al. 2016, Bender and Theodossiou 2014). Longer hours can drive these adverse consequences as long work hours harm health (WHO 2021 and Cygan-Rehm, and Wunder, 2018). Furthermore, performance has negative consequences for

workers' family life as it increases the risk of divorce (Baktash et al. 2023). These findings caution against promoting performance pay as a great equalizer. Family friendly policies and particularly policies encouraging men to take more responsibility for family may be more suitable to achieve greater gender equality.

We end this study with suggestions for future research. Our assumption has been that women with children in performance pay jobs substitute work hours for household production. Future research might identify the women who work in performance pay jobs and with sufficient detail on time use show the household duties they no longer perform.

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Table 1: Definitions and Descriptive Statistics of the Key Variables

Variable	*Definition*	*Mean*	*Std.dev.*
Woman	Dummy equals 1 if the worker is a woman.	0.49	0.50
Performance pay	Dummy equals 1 if the worker faces a regular performance appraisal that has consequences for his or her earnings.	0.27	0.44
$\ln(H_C)$	Natural log of the number of working hours per week stipulated in the worker's contract excluding any overtime. The interviewee answers the question: "How many hours per week are stipulated in your contract (excluding overtime)?"	0.27	0.44
$\ln(H_A)$	Natural log of the number of working hours per week the worker actually works including any overtime. The interviewee answers the question: "How many hours do you generally work per week, including any overtime?"	0.49	0.50

Number of observations = 24057.

Table 2: Mean Comparisons

Variable	*Performance pay* *Mean* *(Std. dev.)*	*No performance pay* *Mean* *(Std. dev.)*	*Difference* *(t-statistic)*
Panel A: Men and women			
$\ln(H_C)$	3.58 (0.23)	3.50 (0.33)	0.08 (18.80)***
$\ln(H_A)$	3.69 (0.25)	3.59 (0.34)	0.10 (21.53)***
Number of observations	6406	17651	24057
Panel B: Men			
$\ln(H_C)$	3.65 (0.11)	3.64 (0.16)	0.01 (2.97)***
$\ln(H_A)$	3.77 (0.15)	3.75 (0.19)	0.02 (6.89)***
Number of observations	3890	8362	12252
Panel C: Women			
$\ln(H_C)$	3.47 (0.31)	3.37 (0.38)	0.10 (12.69)***
$\ln(H_A)$	3.57 (0.32)	3.45 (0.39)	0.12 (14.20)***
Number of observations	2516	9289	11805

Table 3: Initial Estimates

	(1) $\ln(H_C)$	*(2)* $\ln(H_C)$	*(3)* $\ln(H_C)$	*(4)* $\ln(H_A)$	*(5)* $\ln(H_A)$	*(6)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.024 (0.004)***	0.023 (0.004)***	0.018 (0.005)***	0.028 (0.004)***	0.026 (0.005)***	0.021 (0.005)***
Age	-0.012 (0.001)***	-0.014 (0.001)***	0.018 (0.015)	-0.012 (0.001)***	-0.013 (0.001)***	0.015 (0.015)
Woman	-0.227 (0.005)***	-0.208 (0.006)***	---	-0.238 (0.005)***	-0.220 (0.007)***	---
Married	-0.051 (0.006)***	-0.044 (0.007)***	-0.037 (0.011)***	-0.052 (0.006)***	-0.045 (0.008)***	-0.039 (0.012)***
Partner	0.006 (0.006)	0.001 (0.007)	-0.000 (0.008)	0.005 (0.006)	-0.003 (0.007)	-0.006 (0.009)
First-generation immigrant	0.061 (0.007)***	0.052 (0.012)***	---	0.045 (0.007)***	0.038 (0.012)***	---
Second-generation immigrant	-0.008 (0.011)	-0.012 (0.018)	---	-0.011 (0.011)	-0.019 (0.018)	---
Children in HH	-0.036 (0.003)***	-0.037 (0.004)***	-0.037 (0.004)***	-0.037 (0.003)***	-0.040 (0.004)***	-0.040 (0.004)***
Size of HH	-0.005 (0.002)**	-0.007 (0.003)**	-0.003 (0.003)	-0.005 (0.002)**	-0.006 (0.003)**	0.000 (0.004)
Education	0.002 (0.001)**	0.005 (0.002)***	0.085 (0.022)***	0.006 (0.001)***	0.009 (0.002)***	0.088 (0.022)***
Public sector	-0.015 (0.006)**	-0.009 (0.008)	-0.007 (0.011)	-0.022 (0.006)***	-0.023 (0.008)***	-0.016 (0.011)
Tenure	-0.000 (0.000)	-0.000 (0.000)	-0.000 (0.001)	-0.000 (0.000)	-0.001 (0.000)	0.000 (0.001)
Work experience	0.011 (0.001)***	0.013 (0.001)***	0.028 (0.005)***	0.012 (0.001)***	0.013 (0.001)***	0.028 (0.005)***
Permanent contract	0.031 (0.008)***	0.035 (0.011)***	0.029 (0.013)**	0.027 (0.008)***	0.030 (0.011)***	0.026 (0.012)**
Firm size: 20-199	0.046 (0.006)***	0.038 (0.008)***	0.029 (0.011)***	0.055 (0.006)***	0.049 (0.008)***	0.038 (0.011)***
Firm size: 200-1999	0.056 (0.007)***	0.051 (0.009)***	0.036 (0.013)***	0.062 (0.007)***	0.060 (0.009)***	0.046 (0.013)***
Firm size: 2000+	0.036 (0.007)***	0.031 (0.009)***	0.026 (0.013)**	0.044 (0.007)***	0.039 (0.010)***	0.034 (0.014)**
East Germany	0.089 (0.005)***	0.082 (0.007)***	-0.007 (0.037)	0.088 (0.005)***	0.083 (0.007)***	-0.007 (0.037)
Risk tolerance	0.001 (0.001)*	0.001 (0.001)	-0.000 (0.001)	0.004 (0.001)***	0.003 (0.001)***	0.001 (0.001)
Conscientiousness	0.011 (0.002)***	0.008 (0.002)***	0.003 (0.003)	0.013 (0.002)***	0.010 (0.003)***	0.001 (0.003)
Extraversion	-0.003 (0.002)*	-0.003 (0.002)	-0.001 (0.003)	0.002 (0.002)	0.002 (0.002)	0.003 (0.003)
Agreeableness	-0.008 (0.002)***	-0.008 (0.002)***	-0.008 (0.002)***	-0.009 (0.002)***	-0.008 (0.002)***	-0.006 (0.003)**
Openness	-0.002 (0.002)	0.001 (0.002)	-0.001 (0.002)	-0.002 (0.002)	-0.001 (0.002)	-0.004 (0.003)
Neuroticism	-0.003 (0.002)*	-0.002 (0.002)	0.000 (0.002)	-0.000 (0.002)	-0.000 (0.002)	0.000 (0.002)
Locus of control	-0.007 (0.002)***	-0.005 (0.003)**	-0.001 (0.003)	-0.007 (0.002)***	-0.007 (0.003)**	-0.004 (0.004)
Year dummies	Included	Included	Included	Included	Included	Included
Occupation dummies	Included	Included	Included	Included	Included	Included
Industry dummies	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.307	0.301	0.077	0.324	0.320	0.077
Number of observations	24057	14630	14630	24057	14630	14630

Number of employees	14759	5332	5332	14759	5332	5332

The table shows the estimated coefficients. Standard errors in parentheses are clustered at the individual level. * Statistically significant at the 10% level; ** at the 5% level; *** at the 1% level.

Table 4: Gender Splits

	Men					
	(1) $\ln(H_C)$	*(2)* $\ln(H_C)$	*(3)* $\ln(H_C)$	*(4)* $\ln(H_A)$	*(5)* $\ln(H_A)$	*(6)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.009 (0.003)***	0.008 (0.004)**	0.009 (0.005)**	0.013 (0.004)***	0.013 (0.005)***	0.011 (0.006)*
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.059	0.056	0.056	0.104	0.104	0.058
Number of observations	12252	7563	7563	12252	7563	7563
Number of employees	7428	2739	2739	7428	2739	2739
	Women					
	(7) $\ln(H_C)$	*(8)* $\ln(H_C)$	*(9)* $\ln(H_C)$	*(10)* $\ln(H_A)$	*(11)* $\ln(H_A)$	*(12)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.045 (0.007)***	0.041 (0.008)***	0.030 (0.010)***	0.049 (0.007)***	0.045 (0.008)***	0.035 (0.010)***
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.291	0.301	0.139	0.304	0.319	0.145
Number of observations	11805	7067	7067	11805	7067	7067
Number of employees	7331	2593	2593	7331	2593	2593

The table shows the estimated coefficients. Standard errors in parentheses are clustered at the individual level. * Statistically significant at the 10% level; ** at the 5% level; *** at the 1% level.

Table 5: Performance Pay Splits

	Dependent Variable: $\ln(H_C)$				
	(1)	*(2)*	*(3)*	*(4)*	*(5)*
	PP	*No PP*	*Both*	*Both*	*Both*
	RE	*RE*	*RE*	*RE*	*FE*
Woman	-0.182 (0.008)***	-0.235 (0.006)***	-0.240 (0.005)***	-0.221 (0.007)***	---
Performance pay	---	---	0.001 (0.003)	0.002 (0.004)	0.005 (0.005)
Woman x Performance pay	---	---	0.052 (0.007)***	0.047 (0.009)***	0.030 (0.011)***
Control variables	Included	Included	Included	Included	Included
Overall/Within R2	0.264	0.311	0.309	0.304	0.078
Number of observations	6406	17651	24057	14630	14630
Number of employees	4558	11714	14759	5332	5332
	Dependent Variable: $\ln(H_A)$				
	(6)	*(7)*	*(8)*	*(9)*	*(10)*
	PP	*No PP*	*Both*	*Both*	*Both*
	RE	*RE*	*RE*	*RE*	*FE*
Woman	-0.188 (0.008)***	-0.248 (0.006)***	-0.252 (0.006)***	-0.234 (0.008)***	---
Performance pay	---	---	0.004 (0.004)	0.005 (0.005)	0.006 (0.006)
Woman x Performance pay	---	---	0.055 (0.008)***	0.049 (0.009)***	0.034 (0.011)***
Control variables	Included	Included	Included	Included	Included
Overall/Within R2	0.292	0.322	0.326	0.322	0.078
Number of observations	6406	17651	24057	14630	14630
Number of employees	4558	11714	14759	5332	5332

The table shows the estimated coefficients. Standard errors in parentheses are clustered at the individual level. * Statistically significant at the 10% level; ** at the 5% level; *** at the 1% level.

Table 6: Gender and Existence of Children in Household Splits

	Men & Children in HH > 0					
	(1) $\ln(H_C)$	*(2)* $\ln(H_C)$	*(3)* $\ln(H_C)$	*(4)* $\ln(H_A)$	*(5)* $\ln(H_A)$	*(6)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	-0.000	0.001	-0.004	0.008	0.008	0.001
	(0.004)	(0.005)	(0.006)	(0.005)	(0.007)	(0.008)
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.051	0.053	0.043	0.114	0.134	0.048
Number of observations	5644	2696	2696	5644	2696	2696
Number of employees	3998	1050	1050	3998	1050	1050
	Men & Children in HH = 0					
	(7) $\ln(H_C)$	*(8)* $\ln(H_C)$	*(9)* $\ln(H_C)$	*(10)* $\ln(H_A)$	*(11)* $\ln(H_A)$	*(12)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.016	0.009	0.014	0.018	0.011	0.014
	(0.004)***	(0.005)*	(0.006)**	(0.005)***	(0.006)*	(0.007)*
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.073	0.072	0.107	0.107	0.109	0.095
Number of observations	6608	3896	3896	6608	3896	3896
Number of employees	4224	1512	1512	4224	1512	1512
	Women & Children in HH > 0					
	(13) $\ln(H_C)$	*(14)* $\ln(H_C)$	*(15)* $\ln(H_C)$	*(16)* $\ln(H_A)$	*(17)* $\ln(H_A)$	*(18)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.053	0.068	0.062	0.060	0.071	0.070
	(0.012)***	(0.018)***	(0.022)***	(0.013)***	(0.019)***	(0.024)***
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.238	0.255	0.124	0.250	0.281	0.138
Number of observations	4873	2087	2087	4873	2087	2087
Number of employees	3622	836	836	3622	836	836
	Women & Children in HH = 0					
	(19) $\ln(H_C)$	*(20)* $\ln(H_C)$	*(21)* $\ln(H_C)$	*(22)* $\ln(H_A)$	*(23)* $\ln(H_A)$	*(24)* $\ln(H_A)$
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Performance pay	0.037	0.032	0.017	0.039	0.034	0.019
	(0.007)***	(0.009)***	(0.010)*	(0.007)***	(0.009)***	(0.010)*
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.226	0.226	0.063	0.244	0.242	0.065
Number of observations	6932	4052	4052	6932	4052	4052
Number of employees	4453	1573	1573	4453	1573	1573

The table shows the estimated coefficients. Standard errors in parentheses are clustered at the individual level. * Statistically significant at the 10% level; ** at the 5% level; *** at the 1% level.

Table 7: Performance Pay, Existence of Children in the Household, and Gender Hours Gap

	Children in HH > 0					
	Dependent Variable: $\ln(H_C)$			*Dependent Variable:* $\ln(H_A)$		
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Woman	-0.391 (0.009)***	-0.421 (0.015)***	---	-0.404 (0.009)***	-0.440 (0.016)***	---
Performance pay	-0.005 (0.005)	0.002 (0.006)	-0.006 (0.007)	0.003 (0.006)	0.007 (0.007)	-0.002 (0.009)
Woman x Performance pay	0.065 (0.012)***	0.073 (0.018)***	0.074 (0.022)***	0.065 (0.013)***	0.071 (0.019)***	0.076 (0.024)***
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.430	0.456	0.068	0.441	0.478	0.073
Number of observations	10517	4783	4783	10517	4783	4783
Number of employees	7620	1886	1886	7620	1886	1886
	Children in HH = 0					
	Dependent Variable: $\ln(H_C)$			*Dependent Variable:* $\ln(H_A)$		
	(7)	*(8)*	*(9)*	*(10)*	*(11)*	*(12)*
	RE	*RE*	*FE*	*RE*	*RE*	*FE*
Woman	-0.133 (0.006)***	-0.125 (0.008)***	---	-0.142 (0.007)***	-0.133 (0.009)***	---
Performance pay	0.005 (0.004)	0.003 (0.005)	0.015 (0.006)**	0.005 (0.005)	0.003 (0.006)	0.015 (0.008)*
Woman x Performance pay	0.040 (0.008)***	0.035 (0.010)***	0.003 (0.012)	0.044 (0.009)***	0.038 (0.010)***	0.003 (0.013)
Control variables	Included	Included	Included	Included	Included	Included
Overall/Within R2	0.220	0.215	0.063	0.245	0.236	0.065
Number of observations	13540	7948	7948	13540	7948	7948
Number of employees	8677	3085	3085	8677	3085	3085

The table shows the estimated coefficients. Standard errors in parentheses are clustered at the individual level. * Statistically significant at the 10% level; ** at the 5% level; *** at the 1% level.

Appendix

Table A1: Definitions and Descriptive Statistics of the Control Variables

Variable	*Definition*	*Mean*	*Std. dev.*
Age	The worker's age by years ranging from 19 to 60.	43.18	9.75
Married	Dummy equals 1 if the worker is married.	0.64	0.48
Partner	Dummy equals 1 if the worker has a partner, but is not married.	0.21	0.41
First-generation immigrant	Dummy equals 1 if the worker is a first-generation immigrant.	0.13	0.33
Second-generation immigrant	Dummy equals 1 if the worker is a second-generation immigrant.	0.04	0.21
Children in HH	The number of children under 18 years in the household.	0.74	0.99
Size of HH	The number of persons in the household.	2.93	1.26
Education	The worker's years of education ranging from 7 to 18 years.	12.80	2.67
Public sector	Dummy equals 1 if the worker is employed in the public sector.	0.29	0.45
Tenure	The number of years the worker is with their current firm.	11.54	9.89
Work experience	The worker's total length of part-time and full-time employment experience in years.	19.51	10.17
Permanent contract	Dummy equals 1 if the worker has a permanent employment contract.	0.91	0.28
Firm size: 20-199	Dummy equals 1 if the worker is employed in a firm with 20-199 employees.	0.29	0.46
Firm size: 200-1999	Dummy equals 1 if the worker is employed in a firm with 200-1999 employees.	0.24	0.43
Firm size: 2000+	Dummy equals 1 if the worker is employed in a firm with more than 2000 employees.	0.27	0.44
East Germany	Dummy equals 1 if the worker resides in a federal state located in East Germany.	0.26	0.44
Risk tolerance	Score of risk tolerance. The interviewee answers the question: "Are you generally willing to take risks or do you try to avoid taking risks?" on an eleven-point Likert scale. The scale ranges from 0 "not at all willing to take risks" to 10 "very willing to take risks."	4.77	2.19
Conscientiousness	Score of conscientiousness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 1 "does not apply to me at all" to 7 "applies to me perfectly". The sum of items is divided by 3. The items are: I see myself as someone who… "does a thorough job," "does things effectively and efficiently," "tends to be lazy." The last item was recoded in inverse order before adding up.	5.91	0.85
Extraversion	Score of extraversion constructed from adding up three survey items measured on a seven-point Likert scale ranging from 1 "does not apply to me at all" to 7 "applies to me perfectly." The sum of items is divided by 3. The items are: I see myself as someone who… "is communicative," "is sociable," "is reserved." The last item was recoded in inverse order before adding up.	4.85	1.13
Agreeableness	Score of agreeableness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 1 "does not apply to me at all" to 7 "applies to me perfectly." The sum of items is divided by 3. The items are: I see myself as someone who… "is sometimes somewhat rude to others," "has a forgiving nature," "is considerate and kind to others." The first item was recoded in inverse order before adding up.	5.34	0.95
Openness	Score of openness constructed from adding up three survey items measured on a seven-point Likert scale ranging from 1 "does not apply to me at all" to 7 "applies to me perfectly." The sum of items is divided	4.51	1.15

	by 3. The items are: I see myself as someone who… "is original," "values artistic experiences," "has an active imagination."		
Neuroticism	Score of neuroticism constructed from adding up three survey items measured on a seven-point Likert scale ranging from 1 "does not apply to me at all" to 7 "applies to me perfectly." The sum of items is divided by 3. The items are: I see myself as someone who… "worries a lot," "gets nervous easily," "deals well with stress." The last item was recoded in inverse order before adding up.	3.75	1.20
Locus of control	Score of locus of control constructed from adding up eight items measured on a seven-point Likert scale ranging from 1 "disagree completely" to 7 "agree completely." The sum of items is divided by 8. The items are "How my life takes course is dependent on me," "Success is gained through hard work," "Compared to others, I have not achieved what I deserve," "What one achieves in life is, in the first instance, a question of destiny or luck," "I often experience that others have a controlling influence over my life," "When I encounter difficulties in my life, I often doubt my own abilities," "The opportunities that I have in life are determined by the social conditions" and "I have little control over things that happen in my life." Items 4–8 are recoded in inverse order before adding up.	4.95	0.80
Year dummies	Three dummies for the years 2008, 2011 and 2016 (reference year: 2004).	---	---
Occupation dummies	Ten broad two-digit occupation dummies for skilled blue-collar, blue-collar foreman/forewoman, blue- and white-collar master craftsperson, semi-skilled white-collar, skilled white-collar, highly skilled white-collar, white-collar with extensive managerial duties, middle-level civil servant, upper-level civil servant and executive-level civil servant (reference group: unskilled/semi-skilled blue-collar, unskilled white-collar and lower-level civil servant).	---	---
Industry dummies	Six broad industry dummies for manufacturing, construction, trade, transport, banking/insurance and services (reference group: agriculture, energy and mining).	---	---

Number of observations = 24057.

Endnotes

[1] The percentage difference is $e^{\Delta} - 1$ where Δ is estimated difference in log wages.

[2] These reflect that the percent change with a coefficient β is $e^{\beta} - 1$.