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UNEQUAL TREATMENT

A Practical Approach within a Private Firm

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ABSTRACT

This paper examines the personnel evaluation system for a company within the financial services sector. The aim is to test if there is a gender bias in the evaluation system that is said to directly have effect on worker's remuneration. We find signs of favoritism of women as well as the disfavoring of women. It seems that women have a higher probability of receiving a higher grade on performance than men, but a lower probability of being offered opportunities to advance in the corporate ladder. Regarding pay, a large un-standard weighted gap is found when comparing the sexes but the difference is not found significant in the regression models where various gender-associated factors are controlled for.

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Gender equality is more than a goal in itself. It is a precondition for meeting the challenge of reducing poverty, promoting sustainable development and building good governance.

–Kofi Annan

INTRODUCTION

The discussion of gender inequalities and discrimination may seem like an elongated debate with no finish line in sight. Still, the discussion is as active as ever, continuously expanding to new areas. One topic that is inevitable when discussing gender is the gender pay gap. Swedish law has ever since 1980 prohibited gender discrimination in the workplace¹. Yet when you compare the salary of men and women in Sweden 2011 using an un-standard weighted method, women receive on average 89.9 percent of men's pay. The un-standardized method is conducted with no regards to education, age, tenure, sectorial differences and differences in the choice of professions². A gap of 10.1 percentage points might seem large since Sweden is considered one of the most equal countries in the world based on economic, political, education and health criteria³. Nevertheless, even when the mentioned factors are taken into account, the National Mediation Office reports that the gap remains at 5.9 percent⁴.

There are different views on whether an unjust discrepancy exists or not and a satisfying answer has still not reached the masses. Some argue that the gap is merely caused by the individual's own choices concerning work-life balance, sectorial segregation, as well as an 'innate' difference in qualification and ability. Whether factors associated with gender should be seen as justifiable reasons to gender bias or not is a controversial question that remains to be answered.

¹ Nordström, C., 2012, p. 8.

² Stråth, C. 2012.

³ Hausmann, R., Tyson, LD., Zahidi, S., 2012, p. 8.

⁴ Stråth, C. 2012.

PURPOSE

When addressing the issue of gender inequality, economists, psychologists and politicians tend to have a large focus on the gender pay gap. Whenever conclusions are drawn on the gap, controversies arise regarding the reliability of the results due to important variables being omitted in the equation, such as ability and experience.

Our approach is to contribute to the knowledge pool in the gender field by looking at the problem with a magnifying glass. At a micro level, gender issues can be addressed with more delicacy and accustomed to the situation. Consequently allowing specified conclusions to be drawn at the limited population in study. Through a practical context enabled by cooperation with one of Sweden's largest financial groups, this paper aims to examine the evaluation of personnel, which is directly connected to remuneration. In this manner, we will examine whether any gender is favored over the other and if that in turn is enabling the discrepancy.

Many of the problems we face are likely to be applicable in similar settings, i.e. confidentiality issues and possible biases. That is why this report will, to some extent, serve a framework for how a small-scale empirical study can be conducted on a private firm.

The external validity of this study is limited, even if the internal legitimacy is sufficient to provide the firm with valuable insights. We hope that this study will serve as encouragement for future private and public study of gender equality in practical contexts. This will hopefully urge society to take a step further in the direction of increasing equality and economical efficiency.

THE COMPANY

The company, from which the data for this study was collected, is a financial service group, which operates mostly in the Northern Europe. Due to anonymity, the identity of the company will not be revealed throughout this report. The company has an explicit gender policy and the question of equal payment within the organization has been given much attention. Numerous projects with the aim to facilitate gender equality have been taken up throughout the years. Having established cooperation with the HR department, we came to an agreement to investigate and compare gender differences within two

occupations; Personal Bank Officials (PBO) and Relationship Managers in the Middle segment (RMM). This study will be carried out through quantitative research on the evaluation model of the personnel. From hereon the two jobs will be referred to as PBO and RMM.

The Two Occupations

Data have solely been collected on PBO and RMM workers at the company in Sweden. The two positions are very similar in responsibilities even though they belong to different branches. The largest difference between the two is the clientele, where PBOs attention is directed to private households and RMMs to corporations.

PBOs work with a portfolio of customers, which consists solely of private households. The PBO operates within retail banking in an advising role founded on the internal directives and strives to optimize the customer satisfaction as well as the results for the company. One is expected to increase and maintain the customer relations, possess great knowledge in the area and share that knowledge with co-workers. The Head of the Service Branch is the manager for PBO workers.

Within corporate banking, the role of a RMM includes being responsible for a portfolio consisting of middle-segment companies. The Relationship Manager is expected to provide for the customers' needs in order to establish long-term relationships and ensure customer satisfaction. Similar to PBOs, RMM workers are required to use his/her analytical and interpersonal skills to successfully increase customer sales and transactions. It is required of the employee to be relatively sales-oriented and to ensure that all decisions are in line with the company's credit and corporate policies. RMMs answer to the Head of Corporate Branch.

The Performance Development Dialog

The Performance Development Dialog, from hereon referred to as PDD, is an annual dialog all employees have with his/her superior. Each manager has a maximum number of 12 employees to evaluate. All divisions within the company emanate from the same template although it is adapted to the position in question. The two jobs being evaluated have the annual dialog with their respective supervisor, PBOs with the Head of the Service Bank Branch and RMMs with the Head of the Corporate Branch. The main

purpose of the PDD is to evaluate the employee's individual performance during the past year, discuss the present work situation and also to plan for individual development in the future. It is important to add that a separate meeting is held continuously on a monthly basis with the aim to align mutual apprehensions in order to avoid unpleasant surprises when it comes to evaluating the employee's performance. Together with the manager, personal goals are to be set and evaluated during this meeting aiming to stimulate the worker's development. These goals also serve as foundation for the PDD.

PDD produces two important parameters; the PDD score and the Potential level. Both scores have been collected from the company. The first is a mean score of ten success criteria graded on a scale from 1-7, where one is the lowest, seven the highest and a grade of four is considered 'satisfactory'⁵. The criteria emanate from the balanced scorecard with the traditional areas; customers, learning, internal processes and results. Potential is a measure of the possibility to advance or extend the current responsibilities. It is defined as the sum of the employee's readiness, willingness and ability to increase the complexity of one's tasks in a 0-3 year perspective⁶.

The focus of the two job positions differs slightly in terms of evaluation, as four out of the ten success criteria are expressed differently. Unfortunately, the exact wording of the criteria cannot be disclosed due to anonymity. What can be revealed is that PBOs are more customer-oriented having three success criteria in the customer category, whilst RMMs have more criteria in financial-oriented areas. Hence, in this respect there is a difference in priorities that affect the final score and the interpretation thereof.

Each score in the ten success criteria are intended to reflect the worker's performance in the ten areas deemed to represent the job as a whole. In order to ascertain that all managers perceive the success criteria in the same way and maintain the relative grading of the PDD score, continuous meetings between HR partners and managers are held where the distributions of the monthly results are discussed. This way, each manager can benchmark the performance of his/her employees with the performance of all employees within the same profession in Sweden. Moreover, the fact that all ten success criteria according to definition have equal weight on the PDD score, gives us the

⁵ See Table 6 for definitions of the PDD scores.

⁶ Information regarding the variables generated from the PDD and Potential gradings are provided in the method section.

right to view two RMM workers with equal scores to have performed equally well during the past year. Similarly, scores from different success criterion from separate occupations within the firm can also be directly compared to each other as they all have equal weight on the final score. This gives us the liberty of comparing the scores of a RMM worker directly with a PBO worker despite their differences in tasks and job complexity.

Even though it has been determined that all ten success criteria, from which the PDD score is composed, have equal weight on productivity and the value creation for the company, it is still important to assess the meaning and implications incurred by these criteria. The assessment will help to determine if the success criteria are well balanced in a gender perspective. For instance, if men perform better in financial areas than women the preconditions differ for the sexes and will for that reason give different outcomes in the form of diverging PDD and Potential scores.

In preparation for the PDD, the manager and the employee are asked to fill out a preliminary PDD score for each success criterion, reflecting what score they each believe the employee deserves. At the meeting, the manager and the employee reveal their preliminary scores and together discuss and evaluate the employee's performance during the year that has passed. Subsequently, the manager sets a final grade for each criterion and the final score composed as the mean of these scores. Even though the manager makes the final decision alone, the fact that the employee can discuss the scores with the manager suggests that there is a social factor and negotiation factor involved in the PDD score, which will most likely widen the gap between 'true performance' and the 'perceived performance'. When asked to reflect on whether there is room for negotiation, employees and managers from the two departments did not hesitate to affirm. The PDD score is, according to the firm's records, considered a major ingredient in the salary equation. In theory, *PDD* should be a continuous variable representing the true performance of the worker. The PDD scores in the sample are however the performance perceived by the manager, which means the negotiation factor is embedded in the term.

The Potential assessment is also a central element of the PDD since the score represents the employee's readiness, willingness and ability to increase the complexity and responsibility of the job in a 0-3 year perspective. We have chosen to define Potential as a great indication of career opportunities. The Potential assessment results in a grade

from 1 to 4. The score is the outcome of a dialog between the manager and the employee with the foremost purpose to reflect the employee's motivation and ambition of advancement in the corporate ladder. Hence, the negotiation factor in Potential is possibly more striking than in the PDD score.

Policies

One of the more pronounced policies within the firm is that parental leave should not have a direct impact on the salary development. The policy is an extension of the recent law introduced to the Swedish legal system⁷.

Two policies concerning worker's pay in the entire organization are 'the grandparent principle' and the principle that an employee's salary cannot be lowered. The latter implying that a worker's salary can only either remain the same or increase. The effects of this policy persist during any changes, even if the complexity and nature of the job change. This is to our knowledge a common principle at many workplaces in Sweden, where salaries are rarely lowered unless you switch jobs even if you perform notably worse than before the last salary review. The problems arise when employees who have switched jobs from a more complex job to RMM or PBO receive unfoundedly high salaries. According to HR partners, such cases rarely occur and will therefore not be stressed further.

The grandparent principle's objective is to limit the authority for every individual manager. It infers that managers must seek consent from the manager superior to them if any changes to the salary of an employee are to be made. In theory, the grandparent principle will decrease the negotiation factor on salary between the manager and his/her employee. This makes salaries on average more rigid as changes in an employee's salary are less likely to be accepted. The rigidity caused by the grandparent principle will presumably also in turn reduce the explanatory effects of true performance on salary. Although the negotiation factor is believed to be affected the most as the 'grandparent' is likely to be more eager to accept legitimate reasoning behind a salary increase rather than being persuaded through negotiation from the manager. In addition, the manager will not have high incentives to persuade on the behalf of someone else. In summary, the grandparent principle will tone down the negotiation factor affecting salary.

⁷ Rembe, A., 2013.

THEORY AND PREVIOUS RESEARCH

From a historical point of view, raw wage differentials worldwide have been shown to decrease over time. Weichselbaumer and Winter-Ebmer found, through their meta-analysis of the international gender pay gap that the closing of the gap is mainly due to an increased labor market productivity of women. Raw wage differentials worldwide were shown in their study of changes from 1960s to 1990s to have fallen from around 65 to 30 percent, although the unexplained component of the gap was not believed to have declined over time⁸. In Sweden, the gender wage disparity has not been reduced since 1998 but instead slightly increased⁹. In 2006, economist Alan Manning debated that the pace of reducing the gender pay gap had slowed considerably and that it would take 150 years at the improvement rate at that time to close the gap completely¹⁰.

Neoclassical authors, for example Solomon Polachek and the Nobel-Prize economist Gary Becker stress the fact that gender gaps arise due to differences in preferences and ‘innate’ comparative advantages, although they do not explain the cause to these differences. Different comparative advantages between men and women in a household means that, in order to maximize joint output, spouses should specialize¹¹. Babcock and Laschever also suggest that the systematic differences in personality between the genders can cause disparities, referring to innate differences such as women being less effective in negotiation and overall being less self-confident and competitive than men¹². At the other end of the debate, people are skeptical about innate preferences arguing that preferences could be formed under norms, expectations and social contexts. Some suggest that ‘pure’ discrimination exists through various forms of systematic underestimation of the female sex.

DISCRIMINATION STEMMING FROM THE EMPLOYER’S ACTIONS

Two theories, which can explain how discrimination against any gender arises, that can be traced back to the employer’s actions are *taste-based* and *statistical discrimination*. Taste-based discrimination is personal distaste referring to the notion that employers may pay a lower salary to a worker because of disliking a certain group of workers’

⁸ Weichselbaumer, D., Winter-Ebmer, R., 2005.

⁹ Nordström, C., 2012, p. 76.

¹⁰ Manning, A., 2006.

¹¹ Becker, G., 1991, Polachek, S., 1995.

¹² Babcock, L., Laschever, S., 2003.

characteristics. A theory developed by Gary Becker states that in the short run, the workers being discriminated against must ‘compensate’ employers by accepting a lower salary for the equivalent productivity as the indiscriminate worker¹³.

The theory of *statistical discrimination* pioneered by Kenneth Arrow¹⁴ and Edmund Phelps can help in explaining why discrimination occurs. In the absence of perfect information on an individual basis, rational people tend to use other factors as proxies to base their decisions on, in order to maximize their expected utility. The proxies can be a result from statistical experience or sociological beliefs. A rational decision-maker can discriminate against a specific gender, in the same way as one would in any other choice in life. Phelps exemplifies this through the choice between two restaurants. The decision maker would choose the one with the highest expected utility. If one restaurant is believed to be better at least 50 percent of the time and gathering additional information is costly, that option will be chosen even though it may not generate the best outcome in every case since it will make sense in the long run¹⁵.

In Fryer, Goeree and Holt’s paper on Experienced-based Discrimination statistical discrimination has demonstrated to reinforce itself through a feedback loop ¹⁶.

“A young man said ‘Purple workers can’t be trusted... they don’t invest’. The young woman then retorted, ‘I stopped investing because no one would place me in the managerial job’. To this, the young man stated, ‘I did not put you in the managerial job because you did not invest.’”¹⁷

This experiment showed that statistical discrimination was not only reinforced by the employer’s experience, but also reinforced by the worker’s experience-based beliefs. The discriminated workers stopped investing in education because statistically, discriminated workers were not hired regardless of educational background¹⁸. The way

¹³ Becker, G., 1957.

¹⁴ Arrow, KJ., 1973.

¹⁵ Phelps, E., 1972.

¹⁶ Fryer, RG., Goeree, JK., Holt, CA., 2005.

¹⁷ Fryer, RG., Goeree, JK., Holt, CA., 2001, p. 7.

¹⁸ Fryer, RG., Goeree, JK., Holt, CA., 2005.

the workers hung onto their identities resembles a concept proposed by Steele and Aronson called the *stereotype threat*¹⁹.

INEQUALITY PARTLY CAUSED BY THE EMPLOYEE

In addition to inequality caused by the employers, the worker's own actions and decisions can enable gender bias as well. Three concepts in this category are the threat of stereotypes, theories on negotiation as well as personal choices and preferences.

The idea behind the threat of stereotypes is that when poor performance of certain groups is brought to awareness to individuals who identify themselves with that group, it can affect their personal performance in accordance with the stereotype. When the belief that people similar to you by gender, ethnicity and other characteristics are worse at a particular task than other groups in comparison is made prominent, you perform worse at that task. Similarly the threat of stereotypes can have a positive effect on groups of people that identify themselves with elite stereotypes²⁰.

In negotiation contexts, Kray and Thompson found that acquiescing to the threat of stereotypes can in fact result in a better outcome than if not. When behaving in accordance with the stereotypical traits in a bargaining situation, there was a higher outcome for both parties compared to deviation from the stereotype²¹. Kray et al. concludes through their experiments with negotiations that the dominant stereotype of a successful party in a negotiation is comprised mostly of the traits associated with men²². In our report, theories and previous research concerning negotiation will be divided into two parts; the employee's propensity to negotiate and negotiation skills.

According to an empirical study conducted by Gerhart and Rynes, there was no significant evidence that the propensity to negotiate differs between genders when given the same prerequisites. They argue that the outcome of negotiations is affected by structural and environmental factors rather than personal traits. Two examples of structural and environmental factors presented are the differences in the managers'

¹⁹ Steele, CM., Aronson, J., 1995.

²⁰ Ibid.

²¹ Kray, LJ. Thompson, L., 2004.

²² Galinsky, A., Kray, LJ., Thompson, L., 2001.

responses and differences in bargaining techniques²³. The first address the theory elaborated by Dreher et al., which reveal that a negative reaction emerge when women differ from a stereotypical behavior, in this case, when women choose to negotiate rather than accepting the initial offer²⁴. The latter explanation refers to negotiation skills as a consequence of self-selection, where the men in the sample might have been more skilled in using the negotiation techniques²⁵.

Differences in personal traits between genders are likewise examined by Volkema who propose that ethical attitudes in negotiation contexts differ between the sexes. Men had a higher propensity to willingly alter information to their favor, bluffing as well as bargaining competitively to improve their outcome, than their female counterparts²⁶.

On the other hand, some economists propose that there is no major difference in the negotiation techniques between the sexes. Kray and Thompson suggest that no major difference in the negotiation techniques between the sexes exist. Instead, differences in the outcomes of negotiations are incurred by the party who the worker is negotiating with²⁷. Through using the *prisoner's dilemma game*, Bedell and Sistrunk found that the outcome differed depending on whether the negotiating partner is male or female. Men showed a higher tendency to cooperate and use rewards in general, whereas women had a higher propensity to cooperate in a mixed dyad situation than when playing against another woman. When bargaining with the same sex, women with high power roles had a higher propensity to defect when the opponent was weak, than when she was equally powerful. Men on the other hand, showed a higher tendency to defect when meeting a powerful opponent if they themselves were weak. When a powerful man played against a weak opponent, cooperation was more common. Women had higher propensity to induce punishments and use their power in an offensive manner, whilst men used their power as defense²⁸. Kray et al. argue that this would indicate a higher tendency among women to exploit a position of power at the expense of the opponent, especially if the opponent was perceived as weak. The authors conclude that women adjust more to the power

²³ Gerhart, B., Rynes, S., 1989.

²⁴ Dreher, GF., Dougherty, TW., Whitely, W., 1989.

²⁵ Gerhart, B., Rynes, S., 1989.

²⁶ Volkema, RJ., 1999.

²⁷ Kray, LJ., Thompson, L., 2004.

²⁸ Bedell, J., Sistrunk, F., 1973.

situation than their male counterparts, acquiescing when not in power and exploiting in a position of power²⁹.

In previous research, the occupational segregation of men and women has been found to account for substantial portions of the worldwide gender inequality. Although evidence show that levels of gender segregation are higher in ‘progressive’ countries such as Sweden and the United States than in reputedly more ‘gender-traditional’ countries such as Italy and Japan. Though the phenomenon is widely recognized, it is difficult to determine the main reason to why the segregation occurs. It is however credible that the difference is at least in part caused by difference in preferences triggering differences in occupational selection. The idea is that the higher the return to working in male dominant sectors and professions, the larger is the gender pay gap³⁰.

When discussing sex segregation in the labor market, a distinction is made between horizontal and vertical segregation. Horizontal segregation is separation on sectors and industries whilst vertical segregation is the concept of men and women ending up in different positions in hierarchy³¹. According to Buser et al, men tend to choose prestigious roles to a larger extent than women, as well as being more competitive³².

Furthermore in the empirical papers on tracing gender disparities to personal choices, we find factors other than occupational selection that has gender-specific impact on salary. Alan Manning and Barbara Petrongolo investigated the ‘part-time penalty’ in the UK and found that it was estimated to be around 3 percent after taking into account the differences in occupations, working sectors, education, civil status, number and age group of children. At the same time, the authors show that female full-time workers in the UK had higher levels of education than their female part time working counterparts³³. A third of all female workers in the Swedish labor force work part time while for men, the fraction of part time workers is only a tenth. While on a similar topic, women in Sweden have in the past and continuously, checked out most of their days of parental leave. When a child is born or adopted in Sweden, parents are entitled to 480

²⁹ Kray, L.J., Thompson, L., 2004.

³⁰ Hakim, C., 1991.

³¹ Charles, M., 2003.

³² Buser, T., Niederle, M., Oosterbeek, H., 2012.

³³ Manning, A., Petrongolo, B., 2005.

days of parental leave and in 2011, women checked out 76 percent of these days while men only checked out 24 percent³⁴.

As it is impossible to address the enormous amount of literature in gender economics, we have selected the theories deemed most relevant as background to the study. On the subject of labeling the wide spread of theories on whether gender inequalities originate from the employer's or the employee's actions, the aim is to facilitate the determination of where the possible remedies can be implemented.

EMPIRICAL METHOD

In this section, we will elaborate on the empirical process. First, we present the collection process of the data and related implications. Secondly, the relevant statistical models are presented together with the assumptions necessary for the application.

The dependent factors in the study are salary and the scores of PDD and Potential. Salary is used to investigate the gender pay gap, whereas the PDD and Potential scores will examine possible gender gaps in the firm's evaluation system that will affect the individual's career prospects. Gender gaps found in the grading of the PDD score will be interpreted as differences in perceived performance while gaps in Potential level is translated into differences in opportunity to advance to jobs higher up in the hierarchy.

PROCEDURE

After contacting numerous companies in the financial sector, we established cooperation with the current company in study. Qualitative as well as quantitative research was conducted through interviews with HR-partners, managers, RMM and PBO workers along with a thorough examination of the company's records and reports. The data was subsequently brought to us by an HR-employee at the company and originate from the company's internal system. We received a data set of 1240 observations with all available PDD and Potential scores for PBO and RMM employees in Sweden, along with some personal statistics available in the internal system³⁵. Five years ago, the data system where the results of the PDD were registered was replaced by the system the

³⁴ Nordström, C., 2012, p. 43.

³⁵ A more detailed list of variables can be found in Table 4.

company currently uses. Because of this, it was not possible to attain older data than that from year 2008. However, due to the impractical structure of the system, only data from 2012 were obtained and because of confidentiality issues, detailed scoring and comments from the PDD were not attainable. Instead, the performance assessment of success criteria is a mean score from 1 to 7, which will tell us how the employee has performed on average during the year prior to the dialog. This way, it is impossible to tell the grade of each success criterion, making it difficult to reflect on and trace what the individuals did well and in which areas they performed less well.

Judging from the interview answers and records from the company, *PDD* is comparable to a student's GPA. It is the average of ten success criteria scores that, according to the definitions of each score, should be set relative to the workers in the same group. In other words, if every manager rates his employees according to the score definitions without fail, the distribution of *PDD* should follow a normal distribution centered around the score 4. This will be tested through checking if the observed mean is within the 95 percent confidence interval.

Regarding Potential, we suspect that it is not equally rewarding to advance for the workers in the different professions, because workers from the different departments will advance to different positions. Potential scores should therefore foremost be compared for the departments separately.

Data regarding salary has been collected on all RMM and PBO workers in region 290, a total of 107 observations. The salary variable is the worker's monthly earnings adjusted for differences in workload and leave of absence, meaning that a person working only 80 percent who receives in reality 20 000 SEK would in our data be seen to have a monthly salary of 25 000 SEK. To clarify, the monthly salary is the total earnings of the workers as neither RMM or PBO workers receive bonuses or provision.

Due to privacy policies, we have not been informed which region 290 is geographically. However, seeing that 290 is the second largest region measured on the total number of RMM and PBO workers combined, it can be assumed that 290 is a relatively urban area in Sweden. Therefore, a potential bias related to the non-randomly selected sample can exist. If 290 is an urban area, it is plausible to believe that the average monthly earnings in the region would be higher than that of rural areas, due to differences in costs of

living. This should however not affect the sign of the beta coefficients in the OLS estimate, but perhaps the magnitudes thereof.

Seeing that we are dealing with observational data from the internal system of a commercial bank, it can be expected that we would have to face a number of problems when attempting to interpret the results of the regression. Some of the issues that can be suspected to affect the estimates are arguably quite subtle. For instance, the observational errors are suspected to be small. The responses from the employees should be quite accurate since the results have an impact on the employee's wealth and they may jeopardize their position if false information is submitted. The manager also has an incentive to assure that the results of the PDD are consistent with the employee's performance in reality because it is a part of the manager's job and their reputation is at stake. Therefore the measurement error derived from errors in the recording and errors in inaccurate responses are considered to be small. Even if measurement errors exist, assuming that the errors are not systematic and considering that the sample size is quite large, the problem of measurement errors will not be stressed further. Human error when collecting the data and sending it to us is also considered minor due to the fact that the company desires as accurate results as possible from this study. The HR-employee assigned to the task of data collection reported that she double-checked that all observations were correct. Moreover, human errors would presumably reflect badly on the employee gathering the data. We also assume that demographic parameters such as education were verified in the recruiting stage and thus accurate.

The results will foremost be used to provide insights concerning the evaluation system at the company. Any conclusions drawn on the general subject of gender discrimination or pay gap will be made with caution, as we are aware of the fact that the sample does not represent the financial sector as a whole. Facing a likelihood of sample-selection being present, which can neither be eliminated nor corrected unless more data is collected, we will do what is helpful in the situation; discuss the direction of the bias.

To start with, the fact that the company is willing to release sensitive data in order to examine their performance evaluation system implies that the attitude towards gender equality is more positive than in the average firm. Positive attitudes give rise to policies promoting gender equality and it is therefore possible that there are both policies and norms other than the ones earlier addressed, promoting equality at the workplace. In

addition to more positive attitudes, it is possible that the reason the company approved of our study is because they anticipate that they are a relatively gender-equal company in comparison to competing firms. The non-randomness of the two jobs being investigated was also a decision made by the company representatives and could serve as a source of potential bias. The implications of positive attitudes at the firm might lead to the results suffering from an *attenuation bias*, because the mechanisms behind possible sexism are believed to be diluted by the bias. This direction of the bias in this case is uncertain and depends on the intentions of the company representatives. Either the bias is towards zero due to the same logic explained above, or the bias is in the opposite direction because of a *confirmation bias*. The possible confirmation bias could originate from a biased selection of two jobs that would confirm the company representatives' own expectations.

Naturally, the results may have suffered from *observational bias* or more commonly known as *the streetlight effect*, when the data was collected. The streetlight effect on the procedure of this study could have emerged from 'looking for evidence where it is easiest' and collecting observations in the parameters that are most easily observed. In our case, the observational bias could be stronger than normal because the procedure of data collection and the processing of the raw data were made by company representatives and not by us due to the company's secrecy policies. Had we collected the data ourselves, the observational bias could have been minimized, as a more thorough search for data would have been conducted.

There are a number of variables that would have been interesting to include in this study, e.g. number of young children. However, this was not possible due to a limited timeframe and resources. We suspect that the grading estimates are affected by the omission of these variables. Having a young child can for example, temporarily decrease a worker's performance, which subsequently can cause a negative impact on salary. This would imply that other variables contribute to the effect seen through the variable capturing gender, creating a belief that the impact is larger than the true effect.

Other sources of biases that deserve attention concern *self-selection bias*. Women in the banking sector are perhaps not representative for the greater female population in society. It is possible that women working in banks have more 'stereotypical manly

traits' than the average woman in society, as the banking is widely considered a male-dominated profession.

We cannot determine the exact magnitude of which the biases influence the results. However, the effects of the biases will be taken into account when the results are presented and conclusions will be drawn carefully. Moreover, potential biases discussed above mainly complicate generalizations of the results, which is not the main objective of the paper.

GENDER-ASSOCIATED VARIABLES

The primary interest lies in the binary variable *Female* that will account for possible gender discrimination seen in the statistical analysis. The negotiation factor and other important gender-associated factors omitted from the models are also believed to be embedded in its marginal increase.

A dummy that represents the job position is included to separate the two in order to account for occupational segregation. Since there are two parties involved in the grading process, the manager and the employee, it is interesting to examine if the manager's gender influence the PDD grading in addition to the gender of the employee. The possible effect is captured in the dummy variable *Female Manager*.

The grading from the PDD is supposed to reflect the performance at work or at least the manager's perceptions on the matter. Naturally, employees who are not in the office as much as their colleagues can be at a disadvantage because managers might consider them less committed than the typical worker. A variable for both absence of leave and part time is included in the regression to measure the effects.

Interaction terms on all gender-specific variables were generated and tested in the regressions to account for possible interaction effects. The final interaction terms included in regressions were *fParttime*, *RParttime* and *fLeave*³⁶.

³⁶ Interactions between *Female* and all gender-associated variables, as well as *RMM* and all gender-associated variables have been tested. This includes the gender of the manager. However, only the three presented above were included in the final models due to fear of overspecifications. The three were chosen as they were deemed to have the most interesting effects. See Table 4 for definitions of the terms used in the final models.

The PDD and Potential scores are believed to measure different forms of human capital that will in turn affect the earnings of the employee. This means that they should be included as explanatory factors in the estimation of the salary parameter. Although the two variables are believed to reflect different qualities of human capital, there is reason to believe that many of the environmental factors affecting the PDD score will affect Potential as well, since they are set at the same occasion during the PDD. One example is the mood of the manager during the dialog. Because of this, both variables are not included as explanatory variables in the same estimator. Only the PDD score has been chosen for the salary equation, since it is believed to have a larger explanatory effect than Potential on salary.

CONTROL VARIABLES

It seems natural to include the variables *Age*, *Tenure* and *Degree* since they all affect productivity. The quadratic term of age is also included in the regressions to capture the possible stagnation of the productivity curve. Age and tenure are assumed to increase productivity mainly through experience and the opportunity to achieve more productivity enhancing activities as time goes by. *Degree* is assumed to develop the human capital of an employee mainly through enhancing the ability.

Although *Tenure* is not referring to the time at the specific positions in the study, but rather the total accumulated amount of years working at the firm. Nevertheless, *Tenure* remains a relevant variable since it enables the employees to adapt to the company culture, establish social relationships with their co-workers etcetera. Accordingly, as tenure increases, one can feel more secure at the office and receive deeper understanding for the company. Arguably, social factors such as the relationship with the manager and negotiation skills can evolve with tenure as well.

The marginal returns on *Age*, Age^2 , *Tenure* and *Degree* are not of primary interest but merely an attempt to specify the right model.

SPECIFYING THE MODELS

The salary model, equation (1), is very straightforward. It is computed as an OLS estimate, which includes all gender-associated variables and the control variables

mentioned above. The natural logarithm of salary is used, as a glance of the distribution of the parameter displays a slight positive skewness.

$$F(Y_1) = \log(\text{Salary}) \quad (1)$$

The PDD score and Potential score on the other hand, are slightly more complicated when turned into dependent variables. The perceived PDD score, *PDD*, is a discrete parameter with 61 possible steps, since the mean of ten integers can have one decimal. The same issue is met regarding the Potential score as it can only take on four different outcomes. This complicates the selection of method for analysis, as the OLS is not the appropriate estimator given these prerequisites³⁷. In its place, the linear probability model has been selected as it can analyze discrete dependent variables. The LPM assumes that the function follows a normal distribution and takes the form

$$F(Y_{2,3,4}) = P(Y_{2,3,4} = 1 | \text{Female}, X_i) = \phi(\widehat{\beta}_F \text{Female} + \widehat{\beta}_i x_i), \quad (2)$$

where P denotes probability and ϕ is the normal cumulative distribution. The parameters β are estimated by maximum likelihood.

In the probit models, the PDD score and Potential are converted to binary variables, *PDDavg*, *PotRMM* and *PotPBO*, where a grade of 1 reflects a score above average³⁸. The estimates are predicted using MLE as probabilities to attain a score above or below average. We will predict the average marginal effects for all explanatory variables.

The probit model of *PDDavg* is identically specified as the salary OLS model, but naturally leaving out *PDD*. The probit models of *PotRMM*, *PotPBO* and *PDDavg* use the same explanatory variables except for *RMM*, which is omitted from *PotRMM* and *PotPBO* because the grading on Potential was deemed not comparable between the two jobs. The separation is incorporated through having two separate probit models for the different professions. Thus, the basic specifications of the four models can be concluded as the following,

$$F(Y_i) = F(\beta_F^i \text{Female} + \beta_i X_i), \quad (3)$$

where $i = 1, \dots, 4$ represents the four estimators specified above. For all four estimators, the robust option will be used to account for possible heteroskedasticity.

³⁷ An OLS estimation on a multiple linear regression model was computed as well, although not included in the paper as it was deemed not applicable on the evaluation scores and thus not valid for comparison. However, it should be noted that the OLS estimates had practically the same signs and significance levels as the MLE estimates.

³⁸ See Table 4 for the conversion.

HYPOTHESES

Our hypothesis is that the explanatory variable *Female* will have a significant impact on the specified estimators. Thus, the null hypotheses can be stipulated as,

$$\beta_F^i = 0, \quad (4)$$

which we will either reject or fail to reject on a conventional significance level³⁹.

RESULTS

DESCRIPTIVE STATISTICS

When looking at the occupations, the RMM department is dominated by men while the opposite applies for women and the PBO profession, as illustrated below in Table 1. The same male and female dominance is observed when looking at the gender of the managers within the two departments. Although the total amount of female and male managers is equal, approximately 70 percent of the RMM and 46 percent of the PBO managers are men.

Table1. Employee distribution in April 2013.

The number of employees in the sample, divided into four groups by gender and occupation.

	Male	Female	Total
PBO	Group 1 (308)	Group 3 (722)	1030
RMM	Group 2 (130)	Group 4 (80)	210
Total	438	802	1240

The mean days of absence due to leave from work is 30 for men and 80 for women, confirming the belief that *Leave* is a variable depending on gender⁴⁰. Women in the sample are also more prone to work part time as 22.2 percent of the women in the sample have a workload below 100 percent, compared to the men where the percentage is only 5.25. For region 290, the majority of the workers work full time. Without dividing the employees by occupation or gender, 86 percent of the employees in region 290 have a workload of 100 percent. Women in the region have a slightly higher inclination of working part time in both occupations.

³⁹ 1, 5 and 10 percent.

⁴⁰ See Figures 1-14 in the appendix for more details regarding the distributions of the variables.

Since the grading on Potential was deemed incomparable between the two jobs, separate descriptive statistics have been produced on the dummy variables *PotRMM* and *PotPBO*. Women are found to have a lower propensity to receive a grade higher than 2 compared to men in the RMM profession, but higher propensity in the PBO profession⁴¹.

PDD is approximately normally distributed for women, men, RMMs and PBOs individually. All distributions are marginally skewed to the left and the mean of the *PDD* score for all workers in the sample is slightly above 4⁴². By calculating the 95 percent confidence interval for *PDD*, we find that the value of 4 is not within the interval⁴³. The mean *PDD* score is slightly higher for women than for men. When dividing the employees into the four groups illustrated above, the groups' mean *PDD* score is in the following descending order: group 2, 3, 4 and 1. The largest gender gap in the *PDD* score is found in the RMM department where women scored on average 4.7 percent lower, which can be found below in Table 2. Among the PBO workers, we found a reversed gender gap where women scored 2.15 percent higher than men. These discrepancies are straightforwardly calculated through comparing the means of the separate groups.

No one in the sample received the maximum score of 7, the highest score registered in the sample is 6.2. On the lower end, there was one worker who attained 1.0, thus having received the lowest score possible on all ten success criteria. 69 percent of all women in the sample are found to have received a score higher than 4 whereas the corresponding percentage for men is 64. Ratios on of the individuals in the four groups who received higher *PDD* scores than 4 are found in Table 11 in the appendix

⁴¹ The exact ratios of women and men receiving higher Potential scores than 2 in the two professions are found in Table 12.

⁴² See Figures 1-5.

⁴³ See Table 10.

Table 2. Un-standard weighted differences in salary and PDD score between genders.

[1] Difference in mean score between the genders divided by the male score.
 [2] Difference in mean salary between the genders divided by the male salary.
 [3] Difference in median salary between the genders divided by the male salary.

Occupation	Gender	Mean Score	Mean Discrepancies[1]	Median Salary	Mean Salary	Median Discrepancies [2]	Mean Discrepancies [3]
Both	Female	4.29	(0.46 %)	28 433	28 951	10.58 %	12.70 %
Both	Male	4.27		31 797	33 164		
PBO	Both	4.25	N/A	28 426	28 695	N/A	N/A
RMM	Both	4.44		34 000	35 639		
PBO	Female	4.28	(2.15 %)	28 150	28 572	4.41 %	6.56 %
PBO	Male	4.19		29 450	30 579		
RMM	Female	4.24	4.72 %	29 700	30 013	17.04 %	18.45 %
RMM	Male	4.45		35 800	36 803		

Salary in region 290 is approximately normally distributed looking at the males, females, RMMs and PBOs individually. The salary distribution for men is more skewed to the right compared to women⁴⁴. Thus the median of the monthly earnings is an important measurement in addition to the mean, even though both measurements show that men receive higher pay. As shown in the table above, men have a mean salary of 12.7 percent higher and a median salary of 10.6 percent higher than women. We also see that the gender pay gap in the sample is much larger for RMMs than for PBOs. The descending order of the groups' median monthly earnings is as follows; group 2, 1, 4 and 3. This order is not in accordance with the groups' mean PDD scores.

REGRESSION MODELS

One of our findings that is in line with previous research is that *Female* is estimated to have a negative and significant impact on pay. In Table 21, it is shown that a woman, having all other circumstantial details controlled for, receive 5.03 percentage points lower pay than a man. *Female* is also found to have a significant impact in two probit regressions seen in Table 17, 19 and 20; one on the binary version of the PDD and the other two being two versions of Potential grading of PBO workers⁴⁵. The average marginal effect of *Female* on *PDDavg* is significantly positive and has been estimated to

⁴⁴ See Figures 10-14.

⁴⁵ The same probit models has been computed on *PDDavg*, *PotPBO* and *PotRMM* in region 290 alone, all MLE estimates have the identical signs as the presented models on the entire sample. However none of the gender-associated explanatory variables have significant impact at any conventional level, which is presumably due to the small number of observations.

10.5 percent through MLE. The interpretation is that being a woman increases the probability of receiving a PDD score higher than 4 by 10.5 percentage points on average. The *PotPBO* probit regression on the other hand attained an average marginal effect of *Female* being negative and 11.0 percentage points. This means that being a female PBO decreases on average the probability of receiving a higher Potential level than 2.

Other important findings can be seen in Table 17 and 21 the partial effects of *RMM* on *PDDavg* and *Salary* are significant at a 1 percent level. Regression (1) in Table 21, in other words the salary regression without interaction terms, show that being a RMM worker increases monthly earnings by almost 19 percentage points. The average marginal effects of *RMM* on *PDDavg* show that being a RMM worker increases the probability of receiving a score higher than 4 by 16 percentage points.

Parttime is found to have significant effect on *PDDavg* in Table 17, *PotPBO* in Table 19 and salary regression (2) in Table 21. When comparing two versions of the salary model in Table 21, a notable difference was discovered. It seems that without separating out the interaction effect of the four groups, the existence of a partial effect of *Parttime* on *Salary* was rejected at any conventional significance level. However, by adding *fParttime* and *RParttime* we can reject the null hypothesis of all terms concerning part time on *Salary* at the 1 percent significance level. In Table 21 regression (2), the model including interaction variables, we find that *Parttime* has a negative beta coefficient of 14.5 percent. *fParttime* is found to have a positive interaction effect of 16.5 percentage points. Hence, if a female worker has a workload below 100 percent; her salary is expected to increase with 2.0 percentage points. Furthermore, the interaction term of *RMM* and *Parttime* is positive with a size of 13.0 percentage points. Thus the interaction effect of being a RMM worker and working part time combined is slightly negative. The combined part time penalties for the four groups are presented in Table 3.

Table 3. ‘The part time penalty’.

Occupation, Gender	Male	Female
RMM	-1.50 %	15.0%
PBO	-14.5 %	2.0 %

On the other hand, looking at the other gender-associated variable *Leave*, it is seen in Table 19, absence from work seem to have a positive effect on career advancements in the PBO population. The average marginal increase being a part time PBO worker is calculated to increase the probability of receiving a Potential grading higher than 2 with 9.9 percentage points on average for every additionally accumulated year the employee is absent from work. The variable *Leave* is not found to have significant effect on any other dependent variable. It is also noted that when adding the interaction terms to the *PotPBO* probit model shown in Table 20, *fLeave* is found positive and significant at a 10 percent level. Although in the same model, we also discover that *Leave*'s partial effect was instead not found significant at any conventional level. This suggests that when separating the combined effect of being a woman and being absent from work, absence alone does not have a significant impact on career advancements in the PBO population. Looking at these results in a wider perspective, it is possible that the detected interaction effect is simply due to the lack of observations of male workers being absent due to leave.

Further interesting results on gender-associated variables are the ones seen in Table 18 and 20 regarding the gender of the manager's effects on career advancements. *Female Manager* is found to have a positive coefficient in the *PotRMM* regression but a negative coefficient in the longer regression of *PotPBO*. This suggests that regardless of the worker's circumstantial background, female managers within the RMM department are more prone to give higher scores on Potential while female managers for PBO workers tend to give lower scores. In all other computations, *Female Manager* remains insignificant at any conventional level. This indicates that the gender of the manager does not have a direct impact on pay or the PDD grading at the company in study.

PDD as the discrete and un-rounded version of the PDD scores is positive and significant at a 10 percent level in the salary regression, which is found in both versions in Table 21. This is in accordance our initial beliefs, as the PDD score is in many aspects a measurement of short-time performance and human capital, which should have a positive relationship with pay. The marginal effects are measured to 3.2 percentage points increase in monthly earnings by increasing the PDD score with one unit, *ceteris paribus*.

DISCUSSION

Whether any observed gender inequality is attributed to the employee's or the employer's actions is impossible to tell, but most likely it is caused by a combination of both. Arguably, gender inequalities caused by the employee's actions, whether it is through the direct or indirect effects of norms and expectations, are considered warranted as it can only be controlled by the employee him/herself. When it comes to gender bias stemming from the employer's actions, it is possible that measures can be taken as remedy, for example by imposing policies that would facilitate gender equality.

Some of the results presented are unexpected while others were predicted. In the areas where a significant relationship was not found, it does not necessarily mean the relationship does not exist. Especially if one attempts to apply the results in a broader scope, it could be misleading. In addition, although the internal validity is high, one should be reminded that the results only concern gender differences in the two professions in examination during 2012.

Starting with the results we did anticipate, horizontal segregation is apparent in the estimation of the monthly earnings and a great contributor to the standard un-weighted gender pay gap. RMM workers seem to receive both more advantageous pay and scoring in short-term performance than their PBO counterparts in 2012. After assessing differences in success criteria⁴⁶ for the two professions, we provide two possible explanations related to individual preferences and choices that help explain the occupational segregation seen in the results. If men are triggered more by competition than women, one can suspect men to seek positions where objective performance, for example sales volume, is easy to measure and also measured to a large extent. This can explain why we see such high proportion of men in the RMM positions where the success criteria focus more on financial results compared to the less objectively measurable PBO criteria. The second idea is based on the theory that men value prestige more than women. If the perceived prestige in working on the corporate side is higher than the private side, more men than women will also apply for the RMM position.

⁴⁶ A qualitative assessment has been made on the ten success criteria the PDD score consists of, however, details cannot be disclosed due to confidentiality issues.

Regarding gender-associated factors included in the regressions such as *Parttime* and *Leave*, which were initially thought to have a negative impact on an individual's career prospects, our beliefs were only partially confirmed. The variable *Parttime* alone had a significant and negative impact on pay, PDD score and the Potential score within the PBO population. This is in line with the previous research conducted by Manning and Petrongolo in 2005, although the absolute value of *Parttime*'s marginal effect on pay is much larger than what was found in their study. What is interesting to observe in the salary models is that the explanatory effect of *Parttime* only became significant when its interaction effects with *Female* and *RMM* were singled out. In fact, both interaction terms were shown to have a positive effect on pay. Consequently, the part time penalty is largest for men in the PBO department and most advantageous for women in the RMM department who presumably gain 15 percentage points on their pay by working less than full time.

If one considers a traditional household of two people where one partner has to for an unknown reason give up some of his/her working hours, then the one who makes less money is more likely to cut down on the workload, as that would maximize the household's joint output. Women in the sample did show a higher propensity to work part time, which could be due to the reasoning described. However, if the general part time effects on pay at the firm are what have been displayed in the regressions, then overall, women actually gain from working part time at the firm while men instead lose money. This is an interesting finding, though the results still support the arrangements in traditional households. To have the female partner from a household to give up her workload instead of the male partner, the family gains economically per working hour.

As for *Leave*, it was not found significant on any dependent variables except for *PotPBO*⁴⁷, where it was actually discovered to increase the probability for PBO workers of receiving a Potential grading higher than 2. This implies that absence from work due to educational or parental leave does not have significant impact on either pay or the perceived short-term performance. As for the impact *Leave* has on the Potential grading within the RMM profession, it is possible that the lack of significance is not due to a lack of relationship between the two in reality, but rather it could be that the sample size is too small to draw a meaningful inference. The fact that absence of leave does not have

⁴⁷ See Table 19, the regression on *PotPBO* without interaction terms.

significant impact on neither pay nor perceived short-term performance goes against the intuition that overall absence can be conceived as a sign of lack of commitment, which in turn should affect remuneration. In addition, it is arguably even more intuitive that absence from work should affect career prospects negatively, which makes the findings regarding *Leave* even more surprising. It is unfortunate that we cannot divide it into parental leave and leave due to educational purposes. If we for example knew that *Leave* for women in the sample is mostly comprised by educational leave, a possible explanation to the counter-intuitive results is that the workers who are educating themselves instead of working become overqualified for their jobs and will therefore receive a high score on Potential. A second explanation is a possible reverse causality between *Leave* and career prospects in the PBO profession. If absence is instead caused by the affirmation of advancement, the results would make sense. This would mean that there are workers in the sample who are confirmed to advance and in preparation for their job transition. To meet the requirements of the new jobs, internal or external education is needed, which explains the absence. A third theory is that the positive beta coefficient of *Leave* is a result of the relatively new introduced law concerning equal treatment of workers that check out days of leave and workers that choose not to. The company might essentially have put so much effort in complying to the new regulation that it instead resulted in an over-compensation for the workers who check out days of leave, using high scores on Potential level as encouragement for workers to take leave.

Even though we would like to take the readings on *Leave*, *Parttime* and the interaction effects of part time seriously, it is still doubtful that the same results would persist in an improved study with a sample on a greater and less selective population. However, we stay firm on the belief that the results are nevertheless useful to the company and should be brought to awareness.

The gender of the manager is mainly not found to affect neither pay nor the grading of the employees. This suggests that the gender of the manager should generally not matter whether it is regarding the pay or the grading of human capital. However, where the variable is found significant, the outcomes tell us that having a manager of the female sex is favorable in the RMM department as it increases the probability of receiving a Potential score higher than 2. The exact opposite effect is found in the PBO department where having a female manager would decrease the probability of receiving a Potential score higher than 2. Reflecting on these results, the different gender

distributions at the two departments come to our attention. In a female dominated workplace, there is a higher density of both female workers and female managers. In previous research, it was discovered that when women bargain with their own sex, the women with high power roles had a higher propensity to defect when the opponent was weak. As the negotiation influences Potential grading greatly, this theory can help to explain the results we see. In this case, the manager has an established position of power while the worker is consequently in the weaker position. Since there are more female workers with female managers in the PBO population compared to the RMM population, it can help explain why the effect is only pronounced in the PBO profession. In the RMM department, it seems that it is favorable to have a woman as manager, which either could suggest that female managers in that department are more generous and encouraging than their male counterparts, alternatively that the female managers just happened to evaluate more ambitious or capable workers by chance. The employer's gender having a partial contribution to gender inequality is surely an interesting thought and worth considering as a topic of interest for further empirical study for both the company as well as for economists, in order to investigate whether the effects would persist looking at a bigger and broader sample.

Regarding the *PDD* score, the fact that it is approximately normally distributed for RMMs and PBOs individually, is an indication of validity of the parameter, as the parameter is in line with the definition stated in the company's internal documents. However, the fact that the distributions are skewed to the left implies that the managers in charge of the scores fail to calibrate the workers' short-term performances to the pre-defined scale. Including the variable *PDD* as an explanatory factor of the worker's monthly earnings, at first glance, it would seem that the explanatory impact is somewhat low. However, one must keep in mind that the variable only measures the productivity that the employee has displayed the manager in the past 12 months. In addition, considering the salary policies that most likely limit the impact of *PDD* on *Salary*, a 3.2 percentage point increase on the monthly pay for every additional unit of *PDD* does not seem that small anymore.

As an instrument for internal purposes, *PDD* serve the purpose of giving an overview of the workers' relative productivity quite well. The score can also be useful as an incentive for workers to increase their productivity. However, the score is still not as much of a determinant of a worker's salary as stated in the firm's records. It is possible that the

company's aspiration of using the PDD score as basis for setting the employee's salary is too ambitious, once again considering the numerous policies inducing pay rigidity. If the relationship between *PDD* and *Salary* is in reality principally as presented in the results, it is imaginable that the grade will lose the function as an incentive if the empirical connection between *PDD* and *Salary* is not more striking.

On the important variable *Female*, which is our main determinant of gender equality, it is seen that the variable has a negative impact on pay in region 290. In other words, our hypothesis that the gender of the worker matters in determining his/her pay even when circumstantial backgrounds are controlled for, is confirmed. The magnitude of the marginal effect of gender in our study is very close to the standard weighted gender pay gap reported by the National Mediation Office 2012⁴⁸. The reason why the un-weighted and weighted salary gap in region 290 differs considerably is as explained above, mainly because gender-associated factors such as occupational segregation and choices in workload help explain a large fraction of the gap in pay. Even though the OLS estimate on *Female* match the evidence in prior studies, one should still have the possible biases presented in the method section in mind when interpreting the results. The small sample on *Salary* could be a bad representation of the firm as a whole and moreover, since the region was approved by company representatives, the impact of *Female* could be attenuated.

Although *Female* was only shown to have a positive impact on *PDDavg* at a 10 percent significance level, it still indicates that female favoritism exist in that part of the evaluation system. If women are generally attaining higher scores for their performance, intuitively it should result in a higher remuneration as well as high career opportunities, unless the women in region 290 differ systemically from the average women within the occupations. This is however not in accordance with the results seen in neither the salary nor the *PotPBO* regression presented above. Even though managers perceive female workers to perform better than men, they are not compensated through monthly pay or career advancements. This is a sign of unequal treatment between genders being present in the evaluation and remuneration system. Assuming that the female workers in region 290 perform better than their male co-workers, they are still disfavored when it

⁴⁸ The National Median Office reported a standard weighted gender gap of 5.9 percentage points while the marginal effect of *Female* on the monthly earnings in our study is 5.03 percentage points.

comes to the arguably more important elements in their careers; pay and promotion. A possible explanation to the disparities seen is that women in region 290 receive lower pay than men for the same reasons as women in Sweden receive lower pay than men in general. As to why women receive higher grading on their short-term performance, it could be a case of self-selection. Women who work at the firm or even within the financial sector could be capable of performing better than their male colleagues.

Furthermore, the differences of treatment between the sexes could stem from the negotiation factor. Assuming that the female workers in the sample perform better, the fact that men still receive more promotion opportunities might be because they exploit the room of negotiation to a larger extent. Or, an alternative theory is the phenomenon stereotype threat. It is possible that women in the PBO department identify themselves with bad stereotypical characteristics such as low ambition and self-doubt in the form of low self-esteem. If this is true, it would reflect negatively on the Potential score as a large ingredient in Potential is believed to be the worker's own ambition to advance. Even if the female worker actually performs well enough to advance, she could refuse advancement if she has no will to switch jobs.

CONCLUSION

Aside from some controversial findings, this empirical study generally concludes that it could be valuable for a company to oversee its policies and general attitudes that can facilitate gender inequality. We see that there is a difference between men and women in the parameters being analyzed, which indicates that employees are treated differently depending on their gender, although the gender that benefits from the difference in treatment is not always obvious. In the evaluation system with regards to PDD, women seem to have an advantage. However, in terms of both monthly earnings and the evaluation of career opportunities, the opposite is indicated. In other words, the hypotheses of the paper have been confirmed on all dependent variables.

The results show that the un-weighted gender differences, especially the pay gap, can to a large extent be explained by gender-associated factors such as occupation, workload and absence of leave. Thus some of the gender inequalities often cited in society attribute to factors directly or indirectly imposed by the workers themselves. Moreover, it is found that when small groups of individuals are gathered in a larger population, the effects of

gender bias within the groups can be diluted, such as the part time effects found on the four groups separated in the study. On the other hand, the effects on the rest of the population can be exaggerated. In summary, by not investigating separate group effects, one risks to draw incorrect conclusions, which for a company can lead to an inefficient distribution of resources and poorly designed policies.

The evaluation system of the company in the study is far unique in its construction and the systematic differences we have found are likely to exist in other firms as well.

Hypothetically, every organization has the possibility to examine gender issues on their own, which can in turn result in efficient measures that will neutralize gender inequality worldwide. Through this study, we have tried to encourage and assist small-scale empirical studies on gender inequality. Regrettably, the factor hindering companies to initiate gender studies of their own is often economical and not empirical.

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TABLES

-Tables 1-3 are found in the text-

DESCRIPTIVE STATISTICS

Table 4. List and description of variables.

<i>PDD</i>	The employee's final PDD score, recorded 31th March 2012 during the Performance Development Dialog.
<i>PDDavg</i>	A dummy variable which takes the value of 1 if the score is above 4 and 0 otherwise.
<i>Potential</i>	The employee's final potential score.
<i>PotRMM</i>	A dummy variable which takes the value 1 if the Potential score is above 2 and 0 otherwise for all RMM employees.
<i>PotPBO</i>	A dummy variable which takes the value 1 if the Potential score is above 2 and 0 otherwise for all PBO employees.
<i>lSalary</i>	The natural logarithm of the employee's monthly earnings in SEK.
<i>Leave</i>	Time absent from work due to parental leave and additional education expressed in number of years. Leave is an accumulated number of total years absent from the job due to parental leave or additional education between the years 2008-2012. The variable is fairly accurate since it was converted from the amount of hours being absent from the job. The parameter is included in the estimates of PDD, Potential and lSalary to measure and control for the individual differences in leave of absence.
<i>Age</i>	Age of the employee expressed in number of years.
<i>Tenure</i>	Total number of years for which the employee has been hired at the company. It has more specifically been calculated from the employees 'latest first day of employment' which means that for a person who has been re-employed, their previous accumulated employment time is not taken into account. In summary, Tenure refers to the total time without interruption at the company regardless of position.
<i>Degree</i>	A number indicating the academic degrees taken by the employee. An educational code has been transformed to number of years of education and subsequently scaled from 0-6 to illustrate a non-linear return of education. For obscure definitions the amount of years has been set to the assumed net value of the education, i.e. a high school education has been transformed to 3 years even if the student actually completed the degree with duration of four years.
<i>Female</i>	A dummy variable that takes the value of 1 if the employee is female and 0 for males.
<i>Female Manager</i>	A dummy variable which takes the value of 1 if the manager is female, alternatively 0 if male.
<i>RMM</i>	A dummy variable that takes the value of 1 if the employee is a RMM worker. PBO workers are expressed as 0.
<i>Parttime</i>	A dummy variable that captures the effect of part time workers, which takes the value of 0 for full time and 1 otherwise. The observations were taken from the company's internal system on 19th April 2013 and it reveals the workload of the worker at that time. The values can change anytime during the year and is explicitly stated in every worker's contract of employment. As a binary explanatory variable, it intends to measure the effect of working part time on PDD, Potential and lSalary. Parttime is expressed in a percentage that is later meant to generate the actual salary that is paid to the worker, through simple multiplication with the salary level that the employee was on before working part time. Although the raw data on part time reveal more information about the exact percentage of workload, it was decided that the parameter should only take on binary values as the most important aspect of Parttime is whether the worker has taken the initiative to reduce the workload or not.
<i>fParttime</i>	An interaction term between <i>Female</i> and <i>Parttime</i> .
<i>RParttime</i>	An interaction term between <i>RMM</i> and <i>Parttime</i> .
<i>fLeave</i>	An interaction term between <i>Female</i> and <i>Leave</i> .

Table 5. Conversion of educational codes to the variable *Degree*.

Educational Code	Number of years	Degree
Civilekonom	7	3
Civilingengör	8	4
Eftergymn utb kontorsut högst 2 år	5	1
Fackskola allmän	2	1
Fil dr ekonomi/samhvetenskap	12	6
Fil kand ekonomi/samhvetenskap	6	2
Fil kand humanistisk	6	2
Fil kand naturvetenskap	6	2
Fil lic ekonomi/samh vetenskap	10	5
Fil mag ekonomi/samhvetenskap	7	3
Fil mag hymanistiskt	7	3
Folkhögskola	4	1
Företagsek utbildning högre	4	1
Grundskola	0	0
Grundutb sjuksköterska	6	2
Gymnasium allm 3-4 år	3	1
Gymnasium databehandl 2 år	2	1
Gymnasium ek 2 år	2	0
Gymnasium ek 3 år	3	1
Handelsutb allm 2 år	2	0
Informationsutbildning	1	0
Ingegörsutb fackkurs	3	1
Jur kand	6	2
Normalskole kompetens	0	0
Ospecificerad	#N/A	0
Pol mag	7	3
Realskola	0	0
Saknas	#N/A	0
Socionom utb systemvetenskapl utb	6,5	2
Tekniskt gymnasium	3	1
Uppg saknas	#N/A	0

Table 6. Definitions of the PDD scores.

Score	Scale for performance assessment
7	You are performing outstandingly and exceed by far the general performance criteria. You are a role model for others with the same job description.
6	You are performing significantly above what is required of you and exceed what other employees with the same job description achieve.
5	You perform somewhat better than what is necessary and what the performance criteria demands of you.
4	You are performing satisfactorily and you live up to what the performance criteria demands of you.
3	Your performance is almost satisfactory and does not quite live up to what is required. You need instructions on how your performance can be improved in relation to what is required.
2	You are performing only partially what the performance criteria demands of you. To perform better, you need training, and your superior should do a thorough follow-up.
1	Your performance is very weak. An improvement in performance is a must, and an action plan for how it will be achieved will be laid out. You cannot be allowed to perform at this low level for an extended period of time.

Table 7. Definitions of Potential levels.

Score	Potential scale
1	Develop in current position
2	Potential
3	High potential
4	Extraordinary potential

Table 8. Statistical details of the PDD score.

	Percentiles	PDD Smallest		
1%	3	1		
5%	3.4	2.2		
10%	3.6	2.3	Obs	1120
25%	3.9	2.4	Sum of Wgt.	1120
50%	4.25		Mean	4.28375
		Largest	Std. Dev.	.5884685
75%	4.6	6		
90%	5	6	Variance	.3462951
95%	5.3	6.2	Skewness	.0351668
99%	5.8	6.2	Kurtosis	4.15749

Table 9. Statistical details of the Potential score.

Potential				
Percentiles	Smallest			
1%	1	1		
5%	1	1		
10%	1	1	Obs	1136
25%	1	1	Sum of Wgt.	1136
50%	2		Mean	1.829225
		Largest	Std. Dev.	.8219831
75%	2	4		
90%	3	4	Variance	.6756561
95%	3	4	Skewness	.4769954
99%	4	4	Kurtosis	2.051724

Table 10. One-sample t-test on PDD.

The test is computed to see if PDD is distributed around 4 and if PDD=4 lies within the 95 percent confidence interval.

One-sample t test						
Variable	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
PDD	1120	4.28375	.0175839	.5884685	4.249249	4.318251
mean = mean(PDD)		t = 16.1370				
Ho: mean = 4		degrees of freedom = 1119				
Ha: mean < 4		Ha: mean != 4		Ha: mean > 4		
Pr(T < t) = 1.0000		Pr(T > t) = 0.0000			Pr(T > t) = 0.0000	

Table 11. Statistical descriptive of the variable *PDDavg* divided by gender and occupation.

PDDavg for RMMs	Male	% of all RMMs	Female	% of all RMMs
0	30	14,3%	15	7,1%
1	100	47,6%	65	31,0%
Sum	130		80	
PDDavg for PBOs	Male	% of all PBOs	Female	% of all PBOs
0	128	12,4%	232	22,5%
1	180	17,5%	490	47,6%
Sum	308		722	

Table 12. Statistical descriptive of the variable *Pot* divided by gender and occupation.

Pot for RMMs	Male	% of all RMMs	Female	% of all RMMs
0	86	41,0%	49	23,3%
1	44	21,0%	31	14,8%
Sum	130		80	
Pot for PBOs	Male	% of all PBOs	Female	% of all PBOs
0	194	18,8%	536	52,0%
1	114	11,1%	186	18,1%
Sum	308		722	

Table 13. Managers' gender distribution for the two occupations.

Female Manager	PBO	% of PBO Managers	RMM	% of RMM Managers
0	463	45,6%	150	71,4%
1	552	54,4%	60	28,6%
Sum	1015		210	

Table 14. Number of part time workers in region 290 divided by the four groups of workers.

Region 290	Frequency	PBO	RMM	Women	Men	PBO	PBO	RMM	RMM
Parttime	All					Women	Men	Women	Men
0	92 (85.98 %)	67 (83.75 %)	25 (92.59 %)	56	36	50	17	6	19
1	15 (14.02 %)	13 (16.25 %)	2 (7.41 %)	13	2	12	1	1	1
Total	107	80	27	69	38	62	18	7	20

Table 15. Details on *Parttime* for the entire sample.

Parttime	PBO	RMM	Male	Female
0	293	556	122	68
1	15	166	8	12

Table 16. Correlations between variables included in the regressions.

	lSalary	PDD	PDDavg	Potential	Pot	RMM	Female	Female Manager	Parttime	Parttime	Parttime	Leave	fLeave	Degree	Tenure	Age	Age2
lSalary	1.0000																
PDD	0.2971	1.0000															
PDDavg	0.3158	0.8189	1.0000														
Potential	0.1912	0.3701	0.2867	1.0000													
Pot	0.3111	0.3817	0.3256	0.8248	1.0000												
RMM	0.6557	0.1845	0.1512	0.2440	0.3523	1.0000											
Female	-0.3895	0.0591	0.0378	-0.1728	-0.2769	-0.4435	1.0000										
Female Manager	-0.0995	-0.0730	-0.1346	0.0368	-0.0220	-0.0578	-0.0196	1.0000									
Parttime	-0.0348	-0.0456	-0.1248	-0.2141	-0.0666	-0.1227	0.1990	0.0029	1.0000								
fParttime	-0.0237	0.0307	-0.0468	-0.1668	-0.0381	-0.1640	0.2965	0.0436	0.9142	1.0000							
RParttime	0.1220	-0.2094	-0.1993	-0.1419	-0.0761	0.2440	-0.0403	-0.0936	0.3519	0.1636	1.0000						
Leave	-0.2050	0.0049	-0.0663	-0.0351	0.0120	-0.0818	0.1736	0.0334	0.2568	0.2893	-0.0165	1.0000					
fLeave	-0.2289	0.0140	-0.0711	-0.0695	-0.0279	-0.1350	0.2796	0.0347	0.2794	0.3216	-0.0339	0.9671	1.0000				
Degree	-0.0454	0.0062	0.0452	0.1974	0.2416	0.1553	-0.1625	-0.1833	0.0178	-0.0149	0.1501	0.3860	0.3055	1.0000			
Tenure	0.3205	0.1673	0.1856	-0.2663	-0.2250	-0.0353	0.0567	-0.0167	0.0156	-0.0134	-0.1718	-0.2975	-0.2403	-0.3984	1.0000		
Age	0.4657	0.1204	0.1620	-0.1872	-0.1176	-0.0205	-0.0528	-0.0280	0.0423	0.0351	-0.1386	-0.4202	-0.3619	-0.4288	0.7850	1.0000	
Age2	0.4436	0.1111	0.1438	-0.1936	-0.1150	-0.0271	-0.0442	-0.0234	0.0428	0.0300	-0.1451	-0.4249	-0.3624	-0.4438	0.8024	0.9940	1.0000

REGRESSION MODELS

Table 17. LPM of *PDDavg* using MLE, excluding interaction variables.

Average marginal effects		Number of obs = 1112				
Model VCE : Robust						
Expression : Pr(PDDavg), predict()						
dy/dx w.r.t. : Female RMM Female_Manager Parttime Leave Age Age2 Tenure Degree						
	dy/dx	Delta-method Std. Err.	Z	P>z	[95% Conf.	Interval]
Female	.1046844	.0311656	3.36	0.001	.043601	.1657679
RMM	.1595494	.0414809	3.85	0.000	.0782482	.2408505
Female_Manager	-.0179313	.027945	-0.64	0.521	-.0727024	.0368399
Parttime	-.1123	.0367483	-3.06	0.002	-.1843253	-.0402747
Leave	-.0175623	.0425361	-0.41	0.680	-.1009315	.065807
Age	.0186529	.0116803	1.60	0.110	-.0042402	.0415459
Age2	-.0002624	.0001352	-1.94	0.052	-.0005274	2.47e-06
Tenure	.0055471	.0018096	3.07	0.002	.0020004	.0090939
Degree	-.0100184	.0128652	-0.78	0.436	-.0352337	.0151969

Table 18. LPM of *PotRMM* using MLE, excluding interaction variables.

Average marginal effects		Number of obs = 185				
Model VCE : Robust						
Expression : Pr(Pot), predict()						
dy/dx w.r.t. : Female Female_Manager Parttime Leave Age Age2 Tenure Degree						
	dy/dx	Delta-method Std. Err.	Z	P>z	[95% Conf.	Interval]
Female	.0116362	.0732614	0.16	0.874	-.1319535	.1552258
Female_Manager	.1406476	.0718577	1.96	0.050	-.0001908	.2814861
Parttime	-.0510084	.1222511	-0.42	0.677	-.2906161	.1885994
Leave	.1920034	.1320825	1.45	0.146	-.0668735	.4508803
Age	.0471698	.0332263	1.42	0.156	-.0179525	.1122921
Age2	-.0005968	.0003814	-1.56	0.118	-.0013443	.0001507
Tenure	.001013	.0044332	0.23	0.819	-.007676	.009702
Degree	-.0057353	.0289016	-0.20	0.843	-.0623815	.0509108

Table 19. LPM of *PotPBO* using MLE excluding interaction variables.
This model is referred to as the ‘short version’ in the text.

	dy/dx	Delta-method Std. Err.	z	P>z	[95% Conf.	Interval]
Female	-.0816304	.0319578	-2.55	0.011	-.1442665	-.0189943
Female_Manager	-.0463956	.0283408	-1.64	0.102	-.1019424	.0091513
Parttime	-.1429926	.0424335	-3.37	0.001	-.2261608	-.0598244
Leave	.0993523	.0404163	2.46	0.014	.0201377	.1785668
Age	.0196212	.0128132	1.53	0.126	-.0054922	.0447347
Age2	-.0003124	.0001526	-2.05	0.041	-.0006115	-.0000134
Tenure	-.0030426	.0019875	-1.53	0.126	-.0069379	.0008527
Degree	-.000574	.0130707	-0.04	0.965	-.0261921	.025044

Table 20. LPM of *PotPBO* using MLE including interaction variables.
This model is referred to as the ‘long version’ in the text.

Average marginal effects				Number of obs = 927		
Model VCE : Robust						
Expression : Pr(Pot), predict()						
dy/dx w.r.t. : Female Female_Manager Parttime Leave fParttime fLeave Age Age2 Tenure Degree						
	dy/dx	Delta-method Std. Err.	Z	P>z	[95% Conf.	Interval]
Female	-.1097124	.0356757	-3.08	0.002	-.1796354	-.0397893
Female_Manager	-.0487822	.0282817	-1.72	0.085	-.1042134	.006649
Parttime	-.119688	.1278327	-0.94	0.349	-.3702356	.1308595
Leave	-.173201	.167226	-1.04	0.300	-.500958	.154556
fParttime	-.0299129	.1360969	-0.22	0.826	-.296658	.2368321
fLeave	.2915595	.1696454	1.72	0.086	-.0409393	.6240584
Age	.0219138	.0129157	1.70	0.090	-.0034006	.0472281
Age2	-.00034	.0001539	-2.21	0.027	-.0006416	-.0000384
Tenure	-.0030493	.0019901	-1.53	0.125	-.0069497	.0008511
Degree	-.0015083	.0130379	-0.12	0.908	-.0270621	.0240455

Table 21. OLS estimates of two regressions models with salary in its natural logarithmic form as dependent variable.

The sample is solely on region 290. (1) is a short version without interaction variables and (2) is the long version including the interaction variables *fParttime*, *RParttime* and *fLeave*.

VARIABLES	(1) OLS1 lSalary	(2) OLS2 lSalary
Female	-0.0341 (0.0233)	-0.0503** (0.0243)
PDD	0.0324* (0.0186)	0.0334* (0.0191)
RMM	0.187*** (0.0242)	0.174*** (0.0231)
Female_Manager	-0.0132 (0.0170)	-0.0154 (0.0170)
Parttime	0.0136 (0.0222)	-0.145*** (0.0435)
Leave	0.0228 (0.0249)	0.0259 (0.0242)
fParttime		0.165*** (0.0469)
Rparttime		0.130*** (0.0452)
Age	0.0185*** (0.00679)	0.0158** (0.00696)
Age2	-0.000145* (7.62e-05)	-0.000115 (7.81e-05)
Tenure	-0.000295 (0.00131)	0.000215 (0.00137)
Degree	6.39e-05 (0.00821)	0.000305 (0.00823)
Constant	9.643*** (0.130)	9.703*** (0.135)
Observations	92	92
R-squared	0.704	0.724

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

FIGURES

Figures 1-5. Distribution of *PDD* in the separate groups of workers.
It is found that *PDD* is approximately normally distributed for all subgroups.

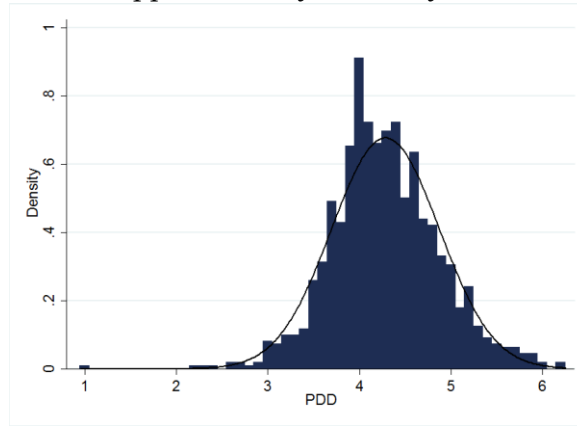


Figure 1. PDD distribution for the entire sample.

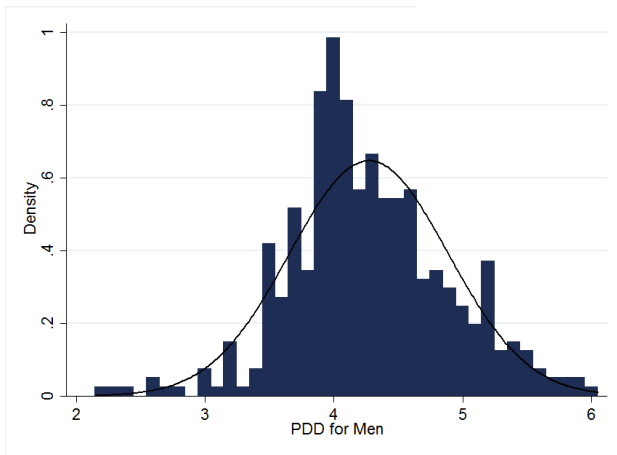


Figure 2. PDD distribution for the men in the sample.

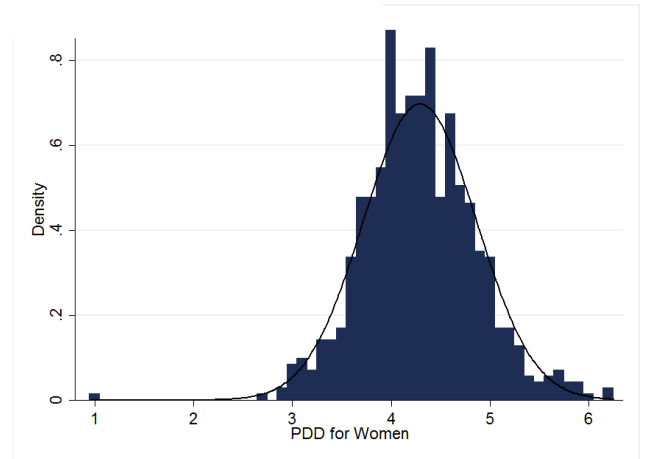


Figure 3. PDD distribution for the women in the sample.

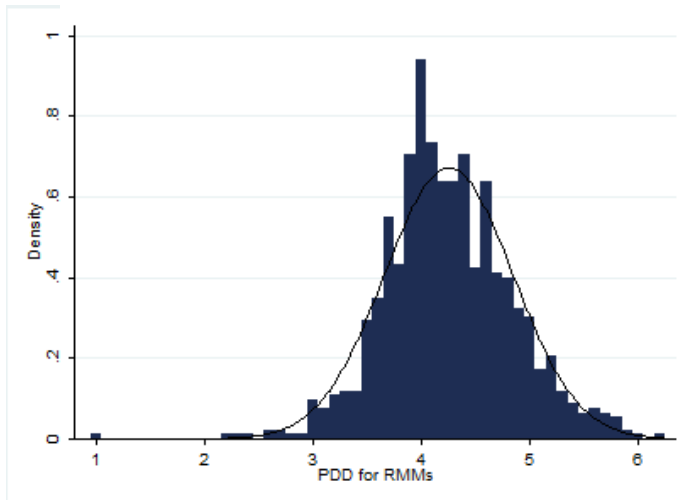


Figure 4. PDD distribution for the RMMs in the sample.

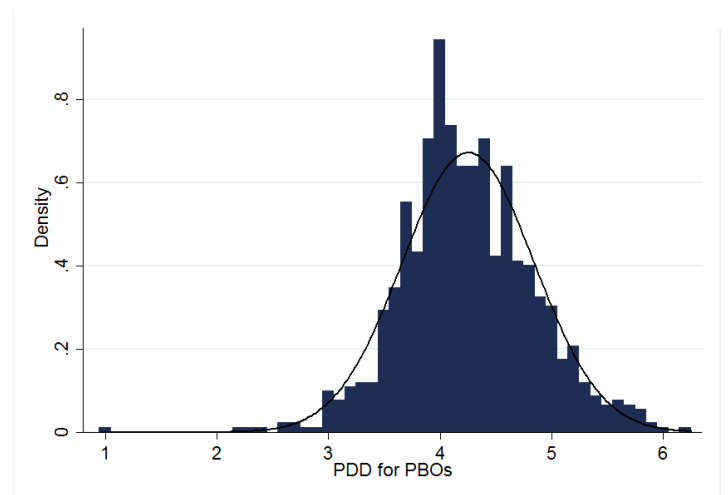


Figure 5. PDD distribution for the PBOs in the sample.

Figures 6-9. Distribution of *Leave* in the separate groups of workers.
Most workers in the separate groups have not been absent more than half a year from their jobs in the past five years.

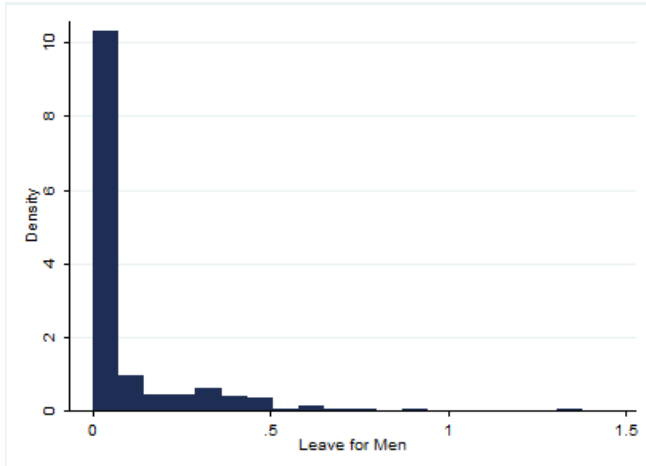


Figure 6. Leave distribution for men.

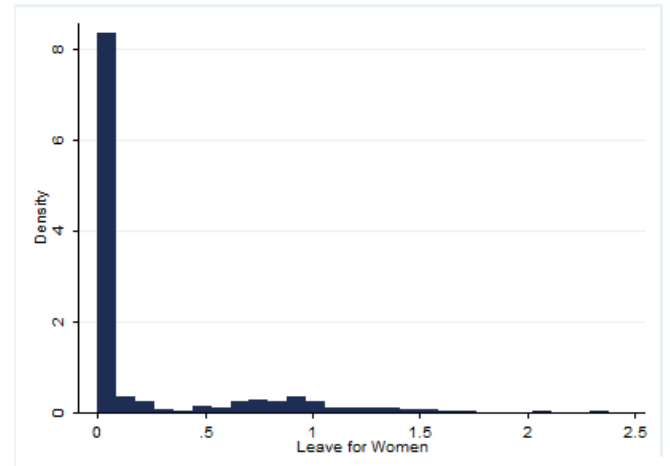


Figure 7. Leave distribution for women.

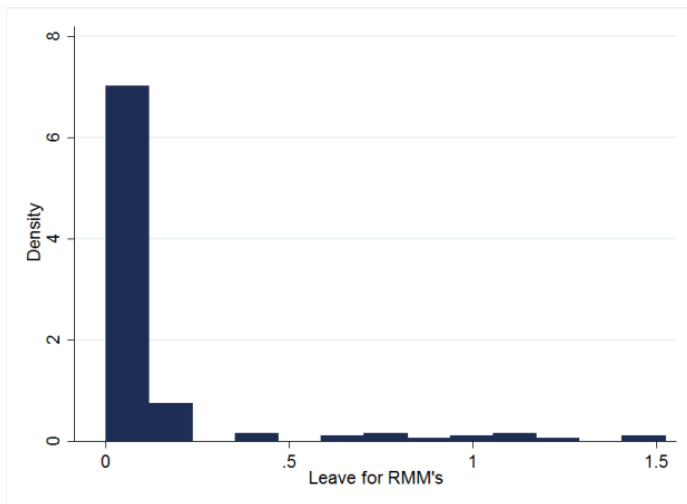


Figure 8. Leave distribution for RMMs.

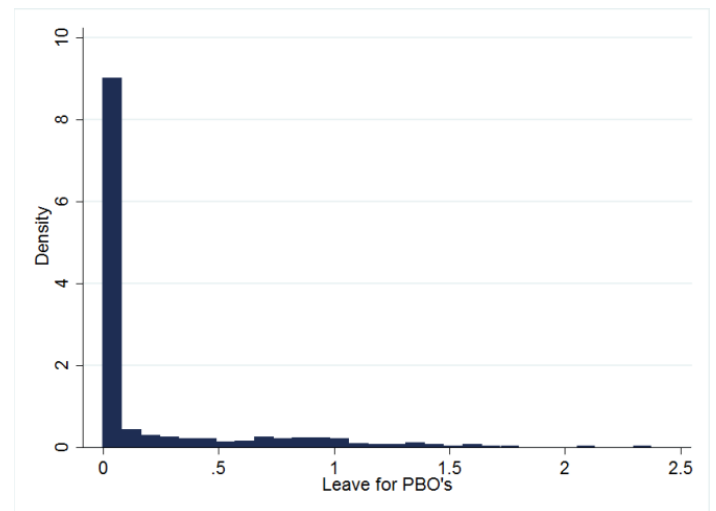


Figure 9. Leave distribution for PBOs.

Figures 10-14. Distribution of salary in region 290, for the separate groups of workers. The salary distributions are slightly positively skewed, which indicates that the models of salary should be in its natural logarithmic form.

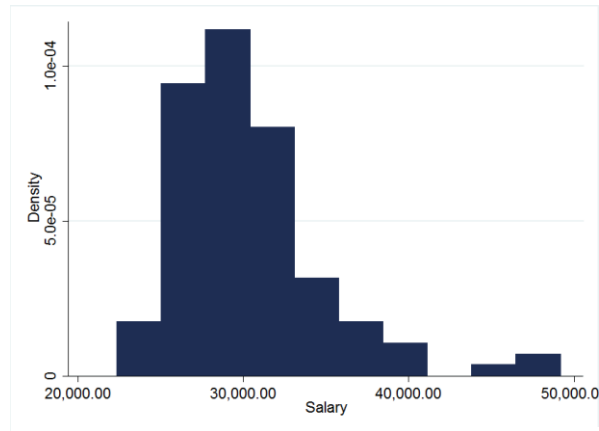


Figure 10. Salary distribution for the entire sample.

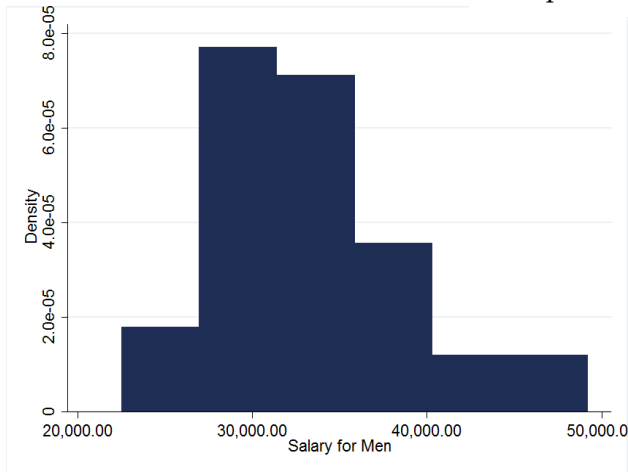


Figure 11. Salary distribution for the men in the sample.

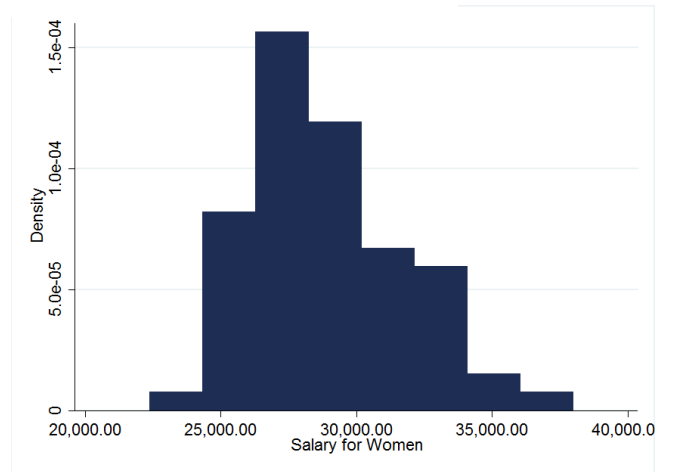


Figure 12. Salary distribution for the women in the sample.

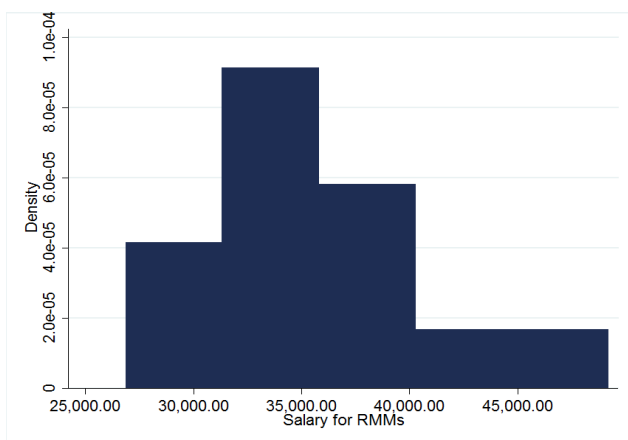


Figure 13. Salary distribution for RMMs.

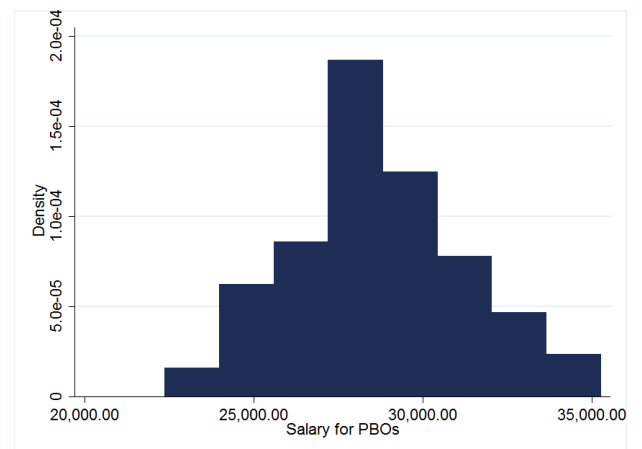


Figure 14. Salary distribution for PBOs.