The Establishment Size-Wage Premium: a reassessment of evidence for France

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ABSTRACT

Many empirical studies have shown a strong and positive relationship between employer size and wages. But there has been less agreement on the reasons of size-wage impact. Using ECMOSS 1992 survey conducted by French Ministry of Labor, we re-estimate the relationship between establishment size and individual hourly wage in order to extend the literature by examining the magnitude and sources of the establishment size-wage premium in France. OLS estimation with White heteroscedasticity-consistent standard errors, selection bias correction through Heckman two step estimation procedure and Decomposition of wages is done for this paper. We found that establishments depending on size have different attributes vis-à-vis same productive characteristics of workers. Our OLS estimation shows the strong impact of compensation and pay practices paid by large employers as we see a very clear difference between gross and basic hourly wages. Results for the elasticity of gross hourly wage with respect to size show that as we double the size, wage will increase by 2 percent. The affect is more important for males than to females. Results for basic hourly wage show no impact of size on wages. Results across gender, professions and type of industry show that the size wage impact is higher for male, blue collar workers and in the manufacturing sector. Results for selection bias correction and decomposition of wage differentials show that selectivity considerations or non random sorting reduces the wage differentials between large and small establishments.

Key Words: Establishment size, wage gap, employees, employer,

JEL Classifications: J3

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1 INTRODUCTION

How the size of firm or establishment explains the wage differentials between employees of similar characteristics is not a new question in labour economics. This phenomenon has been studied for several decades and researchers have provided evidence of strong and positive effect of size of employer on wages of employees. Such studies include (Moore, 1911), (Lester, 1967), (Brown & Medoff, 1989), Brown *et al* (1990), (Idson & Feaster, 1990), (Oi & Idson, 1990), (Groshen, 1991) (Main & Reilly, 1992), (Stephen & Melissa, 1997), (Mizala & Romaguera, 1998), (Troske, 1999), (Criscuolo, 2000), (Paez, 2003), (Lluis & Ferre, 2004), (Lallemand & Plasman, 2005), (Fathi & FitzRoy, 2005), (Lallemand & Plasman, 2005)**,** (Lane, Salmon, & Spletzer, 2007), (Pedace, 2008), (Feng, 2009) and many others. Yet the answer to why large employers pay more is unexplained.

The size-wage gap has been considered as the correlation of employer's or employee's characteristics with size of firm or establishment. There has been less agreement on the reasons of size-wage impact. Various hypotheses have been formulated and tested to determine the magnitude and causes of size-wage gap. Some studies show that the relationship between employer size and wages is based on positive labour quality. A non-exhaustive list of such studies includes Shinohara (1962), Griliches (1969), Hamermesh (1980), Foss (1981), Oi (1983), Brown and Medoff, (1989), Bayard & Troske (1999), Troske (1999), Lluis & Ferrer (2004), Silva (2004), Lluis (2008) etc. Differences in working conditions as a possible cause of employer size-wage gap has been studied by Lester (1967), Master (1969), Scherer (1976), Stafford (1980), Mellow (1982) and Lane & Spletzer (2007). Several explanations of the size-wage gap have been provided in the literature. For example Doeringer and Piore (1971), Oi & Idson (1999), Lazear (1995), Criscuolo (2000) show that wage premium is paid by large employers as efficiency wage to increase workers' productivity., This gap is to avoid monitoring costs according to Kruse (1992) , Piekkola (2000) and Fujiwara-Greve and Greve (2000). The size-wage gap is attributed to the effort to avoid unionization according to Brown & Medoff (1989). This gap is shared as rent as shown by Weiss (1966), Mellow (1982), Katz and Summers (1989), Fakhfakha & FitzRoyb (2002). While Idson and Feaster (1990) and Main and Reilly (1992) estimated selectivity corrected wage equations to take into account the selection bias associated with wage equation, all of the studies found that none of the variable on the right hand side of the equation, whether

related to employer or to the employee characteristics, explains the size-wage gap. Therefore, it is considered as unmeasured factor in the error term that makes it unsolved puzzle.

For the French labour market, there are very few studies particularly Abowd et al. (1999), who have employed longitudinal data set on firms and workers for France to see whether firms that hire high-wage workers are more profitable and more productive or whether high-wage firms are more profitable and productive. The paper examined the fixed person effects and fixed firm effects holding the other constant for the analysis of the individual- and firm-level heterogeneity in wage determination. It is found that individual heterogeneity explains most of the wage gap between various firm sizes compare to firm heterogeneity.

Similarly Margolis and Salvanes (2001) used matched firm-worker panel data for France and Norway to test the hypothesis that higher wages are paid to workers in the form of product market rent by large firms. A positive relation between profit per worker and individual earnings is found. While Fakhfakh & FitzRoy (2002) estimated that employees' wages depend on firms' ability to pay, and/or industry profitability. Two large scale French surveys are combined for this study namely ECMOSS92 (Survey on Employment structure and cost of labour) the one we are using for the present study and EAE (Enquête annuelle d'entreprise conducted by INSEE), an annual, firm- level survey. It is found that firms share rents with manual workers independently of union influence. The firm size-wage effect is statistically highly significant, with the highest wages in the middle range of firm sizes. In another paper by Fakhfakh & FitzRoy (2005), a panel of French establishments is employed to test some implications of the modern theory of dynamic monopsony. A sample from two surveys EAE (Enquête Annuelle d'Entreprises) and ESE (Enquête Structure des Emplois) is taken. A larger long run employer size-wage effect and evidence of rent sharing is found.

Using ECMOSS 1992 survey ("Enquête sur le coût de la main d'oeuvre et la structure des salaires en 1992) conducted by French Ministry of Labor, we re-estimate the relationship between establishment size and individual hourly wage in order to extend the literature by examining the magnitude and sources of the establishment size-wage premium in France. Regressions are run using OLS with White heteroscedasticity-consistent standard errors. In order to capture the unobservable heterogeneity, a sample selectivity approach is applied on the wage equation through a modified Heckman sample selection approach. The correction of sample selection has further enabled us to determine the size and sign of the selection bias. We have decomposed wage differentials across establishment sizes in order to separate out

the percentage of observed differentials arrived from (1) difference in endowments (2) difference in coefficients and (3) selectivity. This will be a unique study using dataset ECMOSS 1992 to re-estimate the size-wage gap and correction of selectivity problem.

The rest of this paper is organized as follows: Section II reviews the theoretical and empirical literature while sections III and IV present the data and the empirical results respectively. The last section concludes.

2 LITERATURE REVIEW AND EMPIRICAL EVIDENCE

Many empirical studies have shown a strong and positive relationship between employer size and wages. For instance Moore (1911) found that as the size of the establishment increases, the condition of the labor improves in all directions. He found 38.5% higher earnings for large employers. Similarly Lester (1967) found 20-25% higher average hourly earnings in large establishments. Brown and Medoff (1989) showed wage premium of working in larger firms between 1.5 and 3.8%. Brown et al. (1990) reported 35% higher hourly wage in firms with 500 or more workers. Groshen (1991) found, after controlling for occupations, establishment wage differential variation from 12 percent in the cotton and man-made textiles industry to 58 percent in the industrial chemicals industry. Similarly Stephen and Melissa (1997) found 18 percent and Mizala and Romaguera (1998) reported 7 to 9 percent of individual wage variation due to establishment wage differentials. Troske (1999) examined industries separately; he estimated that the establishment size-wage premium is 14% for workers in manufacturing, 10% in retail trade, and 11% in services. The results of many recent studies are also consistent with the previous studies. For instance, Ferrer & Lluis (2004) estimated 15% size-wage premium in the United States and 10% in Canada. Paez (2003) found that large firms offer on average 3.30 percent higher wages than small to medium size firms. Main and Reilly (1993) showed the existence of a wage gap of around 18 per cent between large and small establishments. Lallemand and Plasman (2005) examined the magnitude and sources of the establishment-size wage premium in five European countries and found that doubling of the establishment size increases earnings by 0.6 per cent in Denmark, 3.0 per cent in Belgium, 3.3 per cent in Italy, 3.9 per cent in Ireland, and 4.5 per cent in Spain. Pedac (2008) reported that on average, workers in large establishments receive a 9 percent earnings premium but after controlling for non-wage benefits and measures of training, this figure was found to be about 4 percent.

Various explanations with theoretical and empirical perspective have been presented by many authors to answer why large employers pay more, some of which are summarized below.

Brown & Medoff (1989) tested six hypotheses to explain the relationship between employer size and wages: that large employer pay more because of labour quality, compensating wage differentials, union avoidance, stronger ability to pay high wages, to face smaller pools of applicants relative to vacancies or are less able to monitor their workers. These authors have presented two observations. First, large employers pay more for their labour but less for their other inputs because of lower interest rates on funds and quantity discounts. Second, large firms are also older firms and perhaps the employer size-wage may actually be a relationship of firm age and wage.

In the book by Alan Manning on "Monopsony in Motion: Imperfect Competition in Labour Markets" he mentioned that much of the literature (for example Brown and Medoff 1989; Brown et al. 1990; or Oi and Idson 1999) on the employer size-wage effect (ESWE) does not consider the monopsony situation of an upward sloping labour supply curve to an individual employer as an explanation of this effect. A theoretical model is presented for estimating the inverse elasticity of the labour supply curve facing the firm. Where positive shocks to marginal revenue productivity of labour (MRPL) or in other words labour supply curve cause employment to fall and wages to rise if employers do have some labour market power. In sum only the competitive models of labour market do not explain the size-wage effect or the upward sloping labour supply curve in a monopsony situation. There are other non-competitive explanations including efficiency wages and rent sharing.

The hypothesis formulated to explain the size-wage gap include the (1) *Labour Quality Hypothesis:* Hamermesh (1980), Griliches (1969), Foss (1981), Shinohara (1962), Oi (1983), Brown and Medoff (1989), Bayard &Troske (1999), Troske (1999) Feng (2009), Lluis & Ferrer (2004), Silva (2004),Lluis (2008), Millimet (2005) (2) *Compensating Wage Differentials Hypothesis:* Master (1969), Stafford (1980), Lester (1967), Scherer (1976), Mellow (1982) (3*) Efficiency Wages*: Criscuolo (2000), Oi & Idson (1999), Doeringer and Piore (1971), Lazear (1995) (4) *Monitoring costs and entrepreneurial ability:* Kruse (1992) Alchian and Demsetz (1972) (5) *Rent sharing*: Weiss (1966), Mellow (1982), Katz and Summers (1989), Fakhfakha & FitzRoy (2002 & 2005), Margolis and Salvanes (2001) (6) *Union Avoidance Hypothesis:* (Weiss, 1966) etc.

All of the theoretical hypothesizes of size wage effect are based on either compensating differentials related to employer and job characteristics or on measured or unmeasured quality

of labour (Criscuolo 2000). Neo-classical explanation focused on labour quality and working conditions while institutional explanations turn to factors such as market power and union avoidance (Brown and Medoff 1989). Moreover the size of the firm may also depend on input prices and technological development (Oi & Idson, 1999).

The above survey of literature presents different explanations of size wage differential but we don't find any consensus on the reasons of this differential. This motivates to look into it in more detail. Therefore we have chosen ECMOSS 1992 dataset to estimate this differential in French labour market. Data and descriptive statistics are reported in the preceding section.

3 DATA AND DESCRIPTIVE STATISTICS

The data used for this study conducted by French Ministry of Labour, is the "Enquête sur le coût de la main d'oeuvre et la structure des salaires en 1992" aso called ECMOSS survey 1992. It is jointly carried out in all the countries in the European Union. The objective of this investigation is to collect comparable statistics on the direct and indirect salary cost in the European Union countries. Data has been collected against a questionnaire containing four parts. This is a very rich database consisting of socio economic characteristics of workers (gender, age, education, experience etc) and characteristics of establishment (size of the establishment, principal activity, geographic location, wage structures, composition of wages etc). Data for this study has been collected from establishments. It is important to differentiate between establishment and firm. A firm or enterprise is an actual registered company, association or trust, whereas an establishment is each physical location where business is conducted or where services or industrial operations are performed. (For example: a branch, a factory, a plant, operating office, mill store, hotel, movie theatre, mine, farm, and administrative office.)

The sample includes 131,069 numbers of employees who work in different establishments in the year 1992. The number of establishments was 15,859[1].

There are two basic definitions of wages available from this data base : the gross hourly wage and Basic hourly wage: The gross hourly wage is composed of three elements, basic

[1] There are four types of data compilations. Xpt.dta contains data on 15,859 establishments with 597 variables. .Xpt contains total answers of the employer in part C for the employees.

hourly wage, compensation or incentives packages (complements de salaire et indemnities) and overtime paid hours (heures supplementaires). So the gross hourly wage includes the basic hourly wage to which complements are added. For our estimations, we will use both measures of wages with preferences for the first.

Summary statistics are presented in **Table 1**. Main observations are summarized below.

- There are 59 percent males and 41 percent females in our sample
- Average hourly wage is approximately 66 francs, average tenure is 9 years and average experience of the sample is 18 years. Average size of the firm is 386 employees.
- Establishments are classified into three classes, small (1-20 employees), medium(21-300 employees) and large (more than 300 employees).Small establishments account for 25 percent of the sample while medium and large are 47 and 28 percent of the sample respectively. The gender is distributed disproportionally between different classes according to frequency of total establishment size. In the larger establishments there are more men compare to women.
- 18 percent of the sample is highly educated; the highest proportion holds the short technical education that is 35 percent. Gender comparison reveals that the highest proportion of men holds technical short and then primary education, same is the case with women. 21 percent of women and 16 percent of men are highly educated. This shows that only a small proportion of the sample hold technical long or higher education, which may contradict the labour quality hypothesis.
- Industries are classified into three groups, manufacturing, trade and services. The largest share is contributed by service sector, approximately 51 percent, while only 12 percent of the sample is in the trade sector against 37 percent in the manufacturing sector. Men are mostly in the manufacturing sector 36 percent while women are in the services sector 63 percent.
- 62 percent of the sample is married; very small magnitude are divorced or widowed.
- 91 percent of employees hold CDI contract (Contrat à Durée Indéterminée, long-term contract) while only 9 percent are in the CDD (Contrat à Durée Déterminée , fixed term contract type employment contract.
- Professional distribution of employees reveals that approximately 40 percent are blue collar workers while 10 percent are in the cadre of management and high intellectual

professions. The greatest proportion of male is blue collar while for female it is low skill white collar.

Table 2 shows the average of hourly wage, tenure and experience according to different classes of establishments. It reveals that the average hourly earnings rise from 62 franc in small establishments with 1-20 numbers of employees to 77 franc in large establishments with more than 300 employees. This is consistent with the previous studies of positive size wage differential. The wage ratio is 1.26 for men compared to a ratio for female workers of 1.16. The mean duration of job tenure is longer in larger establishments. It is consistent with the hypothesis that larger employers provide more specific training. We can see that mean tenure is more than double in establishments with 300 or more employees compared with establishments with 1-20 employees. According to Ferrer & Lluis (2004) large firms have more ways to attract better workers than small firms by providing promotion opportunities, training and career development. As a result, returns to unmeasured skills or ability should be greater in large firms than in small ones. Table 2 also shows that average tenure and average experience for men is more than average tenure and average experience for women in all type of establishments. This shows greater opportunities for men compared to women in the labor market.

Summary statistics with respect to basic hourly wages and descriptive statistics by mean wage for both measures of wage (gross and basic) are presented at the end of appendices.

4 EMPIRICAL RESULTS

4.1 OLS Estimation

OLS estimation is performed for the gross hourly wage and Basic hourly wage. The gross hourly wage is composed of three elements, basic hourly wage, compensation or incentives packages (complements de salaire et indemnities) and overtime paid hours (heures supplementaires). We have estimated wage equation in two different ways, first by keeping one category of establishment size as reference. Our objective is to see how the effect of different control variables related to workers and employer's characteristics varies across size, i.e. small, medium and large. Later we have estimated the size-wage elasticity taking establishment size as continuous variable.

We have estimated the following equation

$$\boldsymbol{lnW = \alpha + \beta X + \gamma Z + \varepsilon}$$

Where lnW is the log of hourly earnings of employees in francs, X is a vector of worker's characteristics; Z is a vector of characteristics of employer and ε is an error term. We regress log of individual gross hourly wage measured in francs (and basic hourly wage) on control variables to see various other explanations that affect the size-wage gap. Results for the gross hourly wages are reported in Table 3:

Results with respect to gross hourly wages (**Table 3**) show that education gets higher reward in large establishments compare to small. Similarly wages increases for male workers as the size increases. For experience, small establishments pay more as experience increases while results for tenure are independent of size although wage increases as tenure increases. Results for professional categories show that one more blue collar workers will decrease wage by 62 percent compare to management and high skilled professionals in the large category of size, while it will decrees up to 75 percent in other categories of size. This shows that a blue collar worker is paid more in large establishments. Further for type of industry, our descriptive statistics show that large establishments are mostly composed of manufacturing sector, therefore, results for the type of industry show that wage will decrease by more than 50 percent in medium and large establishments if one more establishment is in the trade sector compare to manufacturing sector. Results for the measure of basic hourly wage are reported in **Table 4**.

For the basic hourly wage, results are in the same direction as with the measure of gross hourly wages, but the magnitude is different except for the experience where a worker gets higher wage in large establishment compare to medium or small. Results according to categories of establishments do not reveal a considerable size wage gap.

In the next step we are interested to know the elasticity of the wage with respect to the size of the establishment .That will enable us to see the magnitude of the size wage gap. Following the framework of previous studies, our empirical model is formulated as follows:

$$\boldsymbol{lnW = \alpha + \delta lnS + \beta X + \gamma Z + \varepsilon}$$

Where *lnW* is the log of hourly earnings of employees in francs, $\boldsymbol{\delta}$ is the coefficient that represents size wage elasticity. As for this type of survey only data on establishment size is available, therefore we are using establishment size as continuous variable in order to determine the size wage premium and X is a vector of worker characteristics and γ is a vector

of employer's characteristics as estimated above and ε is the error term with $E\ (X_i\ \varepsilon_i\ ) = 0$. Results are presented in **Table 5.**

Results for the size-wage elasticity show that as we double the size, wage will increase by 2 percent. The affect is more important for males than to females. Further results are computed for basic hourly wage in order to see the impact of compensations and overtime paid hours. Those are reported in **Table 6.** Results are striking as there is no impact on wages if we double the size. For females it is not even significant. This shows that impact of establishment size on basic hourly wage is negligible when we measure with respect to basic hourly wage. Basic hourly wages are established by market or trade unions. One the other hand gross hourly wages have components related to establishments/firms. The gross hourly wage is very much relevant to size because as the size of establishment increases, incentive packages and compensations associated with pay packages increases because large employers give more incentives to retain workers and reduce quit rates and to invoke work effort because monitoring is more difficult in large establishments. Therefore there is a strong impact of compensation and pay practices associated with large establishments on individual hourly wages. The size-wage elasticity coefficients are shown below while the detail tables are in appendix Table 5 and 6.

Dependent variable log of gross hourly wage	**Total**	**Male**	**Female**
Log of Estab size	0.023**	0.027**	0.018**
	41.98	37.83	22

Dependent variable log of basic hourly wage	**Total**	**Male**	**Female**
Log of Estab size	0.003**	0.005**	0
	4.99	6.73	0.53

As we have seen above in table 5 that doubling the size will increase wages by 2 percent. The question arises whether this effect remains constant if we double the size in all ranges of establishment sizes? In order to test this we have run a separate regression and introduced an interaction term where we have interacted log of establishment size with dummy for big size establishment and dummy for medium size establishment. The base category is small size establishment. Results are presented in **Table 7**.

Table 7 shows that pure effect of size on wages after introducing interaction variable is 4 percent. This shows if we double the size of establishment, individual gross hourly wage will increase by 4 percent. While with interaction of log of establishment size with dummy for big establishment, the effect is approximately 5 percent (by adding coefficient of log of

establishment size and coefficient of interaction of log of establishment size with dummy for big establishment). This means in the range of big establishments with employees more than 300, wages will increase by 5 percent if we double the size. Similarly by interacting the log of establishment size with dummy for medium establishment, it is clear that by doubling the size in the medium range of establishment from 21 to 300 employees, wage will increase by 3 percent. If we add control variable related to individual and establishment characteristics, the magnitude in all cases decreases but the effect of doubling the size on wage is still higher for big establishments compare to medium size establishments. But the interaction term for big establishment is not significant in the second case. The effect of other control variables on wage is the same as in table 5.

Results with respect to basic hourly wages after introducing interaction are attached in **Table 10.**

We have also computed results across industries and across occupations where a particular industry type and particular professional group is ept as reference group as done by Padec (2008). Results are presented in Appendix A **Tables 11-14**. For the measures of gross hourly wages, we have found that the magnitude of size-wage elasticity is stronger for manufacturing sector i.e, 0.032 percent against 0.016 percent for trade and 0.018 percent for services sector. This result may suggest that establishment-level characteristics which differ significantly across sectors, such as the capital-labor ratio or the computer usage, may account for the establishment-size wage premium. For professional groups, establishment size wage elasticity is 0.038 percent for blue collar workers. It is the premium paid to blue collar workers working in large establishments compare to blue collar workers in small establishments. It is highest as compared to other professional categories.

For basic hourly wages we have only found significant impact in the manufacturing sector and for the blue collar worker but that is also negligible.

Our OLS estimation shows the strong impact of compensation and pay practices paid by large employers as we see very clear difference between two measures of wages. One more question that arises from this analysis is the potential selectivity problem, i.e. non-random sorting of workers across employers of different sizes. There is a possibility that large establishments self select individuals with certain characteristics for example more work experience and/or better education etc. Therefore, to answer that whether there is a selection bias among workers hired by large establishments, a two step estimation procedure developed by Heckman (1974) has been applied. This is presented in the next section.

4.2 Selectivity Model of Employer Size-Wage Gap

Evidence from various studies suggests that employees working in small and large firms or establishments differ in their personal and social attributes. The heterogeneity in workers and employers results in preference for the employer-employee match. It is inevitable to simultaneously estimate wages in small and large establishments in order to find how workers are allocated across different employers based on the employers and workers attributes. For this purpose we have combined and extended the econometric methodologies used by Idson and Feaster (1990) and Main and Reilly (1992). Idson and Feaster (1990) have used dummy for size category where we have categorized establishments in three sizes.

We assume that there are *j* size categories (*j*= 0, 1, 2) and *i* number of workers (*i*=1, 2, 3…..n). Let K_{ij} be the maximum attainable utility for worker *i* in category *j*. we assume that K_{ij} includes wage and non wage factors related to job. This utility function is composed of deterministic and non deterministic components and may look like the following.

$$K_{ij} = \delta'_{ij} X_i + \varepsilon_{ij} \qquad (1)$$

Where X_{ij} is a vector of observable individual characteristics, δ is parameter vector of individual i in j size category. We assume that individual chooses between large, medium and small size category. The probability that individual chooses large employer is given by

$$\mathrm{pr}_{il} = \mathrm{pr}(K_{il} > K_{im} > K_{is}) \qquad (2)$$

Further by substituting from 1 we get

$$\mathrm{pr}_{il} = \mathrm{pr}(\delta'_{il} X_i + \varepsilon_{il} > \delta'_{im} X_i + \varepsilon_{im} > \delta'_{is} X_i + \varepsilon_{is}) \qquad (3)$$

Workers base their choice for selecting employers on the observable (X) and unobservable attributes (ε) which results in non random selection. In order to get unbiased estimates we need to take into account the decision process as mentioned above in equation 1-3 by predicting size of the firm first to which individual is attached and then including this information in wage equation by employer size. The Heckman two step estimation procedures is generally followed when we need to correct for the selection bias that is associated with estimating separate wage equations by establishment size.

We estimate an ordered probit model where the dependent variable is a dummy variable indicating different size of establishments. In our estimation the relevant characteristics of the respondents available in the data set are considered as the determinants of size of establishments. The latent variable model is as follows

$$Y_i^* = Z'_{i\gamma} + \mu_i \quad (4)$$

Where Y_i^* is unobservable, Z contains the set of determining variables, γ *is* an unknown parameter vector and μ ~ N (0, 1).

If:

$Y_i^* < 0$ The individual works in small sized establishment (4a)

$0 \leq Y_i^* < \mu$ The individual works in medium sized establishment (4b)

$Y_i^* \geq \mu$ The individual works in large sized establishment (4c)

μ is an unknown threshold parameter estimated through the γ vector. Series of cut off points and relevant probabilities are listed below:

$$pr(\mu_i \leq -Z'_{i\gamma}) = \Phi(-Z'_{i\gamma}) \quad (5)$$

$$pr(-Z'_{i\gamma} < \mu_i \leq \mu - Z'_{i\gamma}) = \Phi(\mu - Z'_{i\gamma}) - \Phi(-Z'_{i\gamma}) \quad (6)$$

$$pr(\mu_i \geq \mu - Z'_{i\gamma}) = 1 - \Phi(\mu - Z'_{i\gamma}) \quad (7)$$

Following the research methodology by Main and Reilly (1992) we start by specifying the three employer size-wage equations as follows:

$$W_0 = X'_0\beta_0 + \varepsilon_0 \quad (8a)$$

$$W_1 = X'_1\beta_1 + \varepsilon_1 \quad (8b)$$

$$W_2 = X'_2\beta_2 + \varepsilon_2 \quad (8c)$$

Where *W* is the natural logarithm of the hourly wage, X is a matrix of wage determining variables, β is a vector of unknown parameters and ε are the error terms. The subscripts 0, 1 and 2 denote 'small', 'medium' and 'large' plants, respectively. The errors are assumed to be normally distributed with a covariance matrix, in compact form, given by:

$$\Sigma_{kj} = \begin{bmatrix} 1 & \sigma j\rho j \\ \sigma j\rho j & \sigma^2 j \end{bmatrix} \quad (9)$$

Where k = the attachment equation (1); j = *0,* 1 and 2 corresponding to the wage equations (8a)-(8c); ρ is interpreted as the correlation coefficient between *εj* and μ; and the σ^2j terms are the error variances of the wage equations.

The conditional expectations of the wage equations are given by:

$$E[W_0] = X'_0\beta_0 + E[\varepsilon_0 | \mu < -Z'_\gamma] \quad (10a)$$

$$E[W_1] = X'_1\beta_1 + E[\varepsilon_1 | -Z'_\gamma \leq \mu < \mu - Z'_\gamma] \quad (10b)$$

$$E[W_2] = X'_2\beta_2 + E[\varepsilon_2|\mu \geq \mu - Z'_\gamma] \quad (10c)$$

Where E [•] is the expectations operator. The final terms on the right-hand side of (10a)-(10c) can be used as a proxy by appropriately specified selection terms.

The μ and the γ vector of parameters are obtained by maximum likelihood techniques. The likelihood function for the ordered probit model, used in this study, is given by:

$$L = \Pi_{Y=0}\, \Phi(-Z'_\gamma)\, \Pi_{Y=1}[\Phi(\mu - Z'_\gamma) - \Phi(-Z'_\gamma)]\, \Pi_{Y=2}\, [1 - \Phi(\mu - Z'_\gamma)] \quad (11)$$

The maximum likelihood estimates for μ and the γ vector are then used to construct the truncated means in (12a)-(12c). These constructed variables are then inserted into the wage equation (12) and OLS estimation is performed. A general version of the wage equation including the truncated means would have the following form

$$\boldsymbol{W_j = X'_j\beta_j + \rho_j\sigma_j\lambda_j + v_j} \quad (12)$$

Where the λj term is the truncated mean and is defined for 'small' sized establishments as:

$$\lambda_0 = -\emptyset(Z'_\gamma)/[1 - \Phi(Z'_\gamma)] \quad (12a)$$

For medium size establishments

$$\lambda_1 = \{[\emptyset(-Z'_\gamma) - \emptyset(\mu - Z'_\gamma)]\,/[\Phi(\mu - Z'_\gamma) - \Phi(-Z'_\gamma)]\} \quad (12b)$$

For large sized establishments

$$\lambda_2 = \{\, \emptyset(\mu - Z'_\gamma)/[1 - \Phi(\mu - Z'_\gamma)]\} \quad (12c)$$

Where $\emptyset$ (.) and Φ (.) are the standard normal density and distribution functions, respectively.

The result of ordered probit model is shown in T**able 8** where the dependent variable is the size of establishment. First column show the estimated coefficients of ordered probit model. The following columns report the marginal effects for different outcomes. The categorical variable, showing the establishment size ranges from zero to two showing three different sizes of establishments. The estimated coefficients give the signs of the partial effects of each explanatory variable on the response probability. The probability is always evaluated at the means of the corresponding explanatory variables.

The results show that being male and having better education increase the chance of belonging to larger establishment. On the other hand, as the coefficients for the type of

industry being 'Trade' or 'Service' are negative and significant, we can say that large establishments are mostly composed in the manufacturing sector.

If we compare the results in the last two columns, we see that the coefficient in case of gender is positive and significant in case of larger establishments (0.03 in case of large establishments). This means that that large establishments self select male workers.

For educational categories, we observe positive marginal effect of all educational categories for large size of establishment as compared to medium or small establishments. This may show that larger establishments attract people with better education or the probability of belonging to larger establishment is higher for highly educated people.

Also, as larger establishment are more likely from the manufacturing sector, we observe that the probability of trade sector is 27 percent lower as compared to manufacturing sector for large establishments. In case of services sector we have found the positive marginal effect for medium and small categories.

We thus conclude that male workers, more educated employees and manufacturing sector are mostly associated with large size category.

In the second step selectivity corrected wage equations are estimated for different size of establishments separately. These maximum likelihood estimates are then used to construct the truncated mean or selection terms (λ) for three different sizes of establishments as mentioned in the methodology. We used the selection terms in the wage equation as an additional explanatory variable in the OLS estimation. The results are reported below.

The dependent variable is the log of gross hourly wage. Results show that tenure, experience, being male and education increases hourly wage in all sizes of establishments. We also see that more educated employees are better paid in large establishments. On the other hand, tenure and experience are rewarded more in smaller establishments.

The importance of taking the selection bias into account can be seen from the statistical significance of the selection terms (λ). These significant selection effects indicate the existence of unobservable common to both the selection and wage determination process. When ρ is positive, it indicates that unobservable are positively correlated with one another and vice versa. Here the results show that λ and ρ are negative, which shows that unobservable are negatively correlated with one another.

Our results have shown a positive selection coefficient for small establishments and negative selection coefficient for large establishments. The effect of selection on wage equation depend on the covariance of the error term of the selection equation μ_i and error term of the wage equation v_j, and the sign of the truncated mean. This would imply that for

small size category the selection coefficient shows the positive selection. This yields a higher wage knowing that individual is in small size establishment compare to not knowing the size of the establishment. The opposite is true for large size category. Negative selection coefficient would imply negative selection. This yields higher average earnings for an employee who is not sorted into large size compare to an average employee who is sorted into large size. Our results show that the observed pattern reduces wage differential between small and large establishments. More educated, more experienced and high profile individuals may not be preferred by large establishments due to their formal work environment where independence is restricted. It follows that high profile individuals are attracted to small establishments where they can work independently. So the dynamic and innovative workers are not fitted with large employers. A random sorting will redistribute the productive and innovative worker into large establishments and will increase wage differentials. A non random sorting or the observed pattern of sorting reduces the wage differential between small and large establishments.

4.3 Decomposition of Employer Size-Wage Gap

Our results in previous section show that correction of selection bias reduces the wage differentials between large and small establishments. Now we will examine the implications of the selection correction in wage equation and we will try to sort out this ambiguity in the context of wage decomposition. Decomposition of wage differentials has been studied by many authors in the context of gender, race etc. But decomposing wage differentials by employer size has not been explored in detail. The wage decomposition analysts consider firms to have the same attitude vis-à-vis workers' characteristics. We know that workers are different from one another due to their individual and demographic characteristics. The firms are also different in their behavior of selecting workers, examining their characteristics and rewarding their characteristics. Hence it becomes important to examine how size of the firm affects the decision of firm in selecting and evaluating workers of different characteristics. The conventional wage decomposition literature ignores the aspect that whether firms have different attitudes concerning the size. We look for different attitudes of firms according to size for different types of workers.

We apply decomposition to our regression results. We have applied Blinder (1973), Oaxaca (1973), and Neuman, Oaxaca (2004) wage decomposition. We want to separate out

the percentage of various factors that may cause observed wage differentials. The factors may include difference in the characteristics of employees, difference in the evaluation of these characteristics by different size employers and the selection bias. We have three classes of establishment, small, medium and large. Therefore we decompose the wage equation first for large and small and second for medium and small. The reference category is small size establishments in both cases. Our wage decomposition equations may look like the following:

$$\overline{lnw_B} - \overline{lnw_S} = (\overline{X_B} - \overline{X_S})(\widehat{\beta_S}) + (\widehat{\beta_B} - \widehat{\beta_S})(\overline{X_B}) + \psi_B\overline{\lambda_B} - \psi_S\overline{\lambda_S} \quad (1)$$

$$\overline{lnw_M} - \overline{lnw_S} = (\overline{X_M} - \overline{X_S})(\widehat{\beta_S}) + (\widehat{\beta_M} - \widehat{\beta_S})(\overline{X_M}) + \psi_M\overline{\lambda_M} - \psi_S\overline{\lambda_S} \quad (2)$$

Where B, M and S are the big, medium and small size establishments respectively. lnW is the log of gross hourly wage measured in francs. First term on the right hand side $(\overline{\mathbf{X_B}} - \overline{\mathbf{X_S}})(\widehat{\boldsymbol{\beta}_S})$ show the wage differential attributable to Endowments. $\overline{\mathbf{X}}$ is the mean vector of wage determining variables that includes education, experience, tenure etc. $\widehat{\beta}$ is the estimated return to the wage determinants. The difference in the mean value of individual characteristics is weighted by the estimated coefficients of small group.

The second term on the right hand side of equation (1) $(\widehat{\beta_B} - \widehat{\boldsymbol{\beta}_S})(\overline{\mathbf{X_B}})$ show the wage differential attributable to coefficients. The difference in the returns to individual characteristics in different size establishments is weighted by the mean characteristics of big group. While the third term $\psi_B\overline{\lambda_B} - \psi_S\overline{\lambda_S}$ captures the selection bias effect. λ is the inverse mills ratio (IMR) calculated in the above section and ψ is the covariance of the errors in the wage equation and the ordered probit. It is an estimate of σ_μ .

We define E as the differential related to difference in the endowments between small and big group, C difference in the coefficients, U difference in the intercepts or the unexplained portion of the differential, S is the difference related to selection bias, R is the total wage differentials, RS is the total differential net of selectivity portion.

$$R = E + C + S + U$$

$$RS = R - S$$

Results are reported below:

Decomposition of Wage Differentials

Size	Endowments (E)	Coefficients (C)	Selectivity (S)	Intercepts (U)	Total (R)	Total net of selectivity (RS)
Medium	0.0221	0.0008	0.0610	-0.0190	0.0650	0.0040
Big	0.1247	-0.0150	0.0005	0.0950	0.2051	0.2046

	Endowment Proportion (E/R)	Coefficient Proportion (C/R)	Selectivity Proportion (S/R)	Unexplained Proportion (U/R)
Medium	0.3408	0.0125	0.9391	-0.2924
Big	0.6076	-0.0733	0.0026	0.4631

Results for the big establishments show that the differences in the mean measured characteristics of the employees are more important than difference in evaluating the characteristics of individuals by employers of different size. This is a big contributor of the wage gap in big establishments. We can say that differential employee attributes contribute more to the wage gap then the differential evaluation of employees by different size employers.

For the medium size establishments, the greatest contributor of wage differential is the selectivity factor. Wage differential between medium and small shows that small establishments match individuals with job requirements. Therefore high profile individuals are attached to small establishments where they can work independently compare to medium or large establishments.

When we see the column Totals (R) that includes the selection correction, we observe that it reduces the wage differential or wage gap, this means that the predicted wage when we know that an individual is matched to the small establishment is less than the predicted wage when we do not know that the individual is matched to the small establishment, similarly knowing that individual would match to the large establishment lowers the wage gap. This shows that non random sorting of workers reduces the wage differential between large and small size establishments.

Some additional calculations have been computed to predict the wage gap when we sort an individual to a particular size of establishment. We compare between big and small

size establishments. First we see the implied log wage gap of an individual who is sorted into the big establishment.

$$Wage\ gap \mid Big\ establishment = E(W_{\downarrow}B \mid Z_{\downarrow}ij = B) - E(W_{\downarrow}s \mid Z_{\downarrow}ij = B)$$

$$= \widehat{\beta'}_B\overline{X_B} + \psi_B\overline{\lambda_B} - [\widehat{\beta'}_S\overline{X_B} + \psi_S\overline{\lambda_B}]$$

[23.869 + (-0.058)] – [16.807 + 0.046] = 6.958

Where B is the largest category of the establishment size and S is the smallest category of the establishment size. These are the conditional log wage gaps. We see that with selectivity affect an average employee gets implied log wage gain of 6.958 when he is sorted in big establishment with 300 or more employees. The net of selectivity wage gain is (23.869-16.807) 7.062. So, net of selectivity, an average employee in big establishment would gain 7.062 over what he would get if he works in small establishment with 1-20 employees. When we take into account the selectivity the differential drops to 6.952. The selection effects reduce wage differential between big and small to 0.104.

$$Wage\ gap \mid Small\ establishment = E(W_{\downarrow}B \mid Z_{\downarrow}ij = S) - E(W_{\downarrow}s \mid Z_{\downarrow}ij = S)$$

$$= \widehat{\beta'}_B\overline{X_S} + \psi_B\overline{\lambda_S} - [\widehat{\beta'}_S\overline{X_S} + \psi_S\overline{\lambda_S}]$$

[17.313 + 0.074] – [12.191 + (-0.059)] = 5.255

Similarly for an average employee in small size establishment with 1-20 employees, the net of selectivity log wage gain is (17.313-12.191) 5.122. While with selection the average wage gain increases to 5.255. So workers sorting in small establishment tend to increase the wage gain. This further leads to decrease the wage differentials between small and large establishments. We may conclude that the selectivity considerations tend to reduce wage gaps between big and small size establishments.

5 CONCLUSION

We have presented OLS estimates using gross hourly wage and basic hourly wage of employees. Firstly, OLS is computed by size of the establishment where we found higher rewards for education in large establishments with more than 300 employees. We don't find any size sensitive impact of other control variables. For the basic hourly wage, results are in the same direction as with the measure of gross hourly wages, only the magnitude is different.

Secondly, we have computed size-wage elasticity taking log of establishment size as an explanatory variable. We found that doubling the size will increase wages by 2 percent for

the measures of gross hourly wage. Establishment size wage differential with gross hourly wage exists in all professions; it is common to workers in all occupations. Similarly results by type of industry shows that in the manufacturing sector the size-wage elasticity is higher. The premium may be associated with inciting workers to put maximum effort and may be given as efficiency wage. The OLS results when we take only the basic hourly wage of employees show that Establishment size-wage elasticity only exists for male employees, in the manufacturing sector and for the blue collar jobs but its magnitude is of no importance and negligible. This shows the relative importance of incentive and compensation packages. Large establishments pay wage premium in terms of compensation packages and overtime paid hours. According to efficiency wage theories, large employers may substitute high monitoring costs with wage premia in order to incite workers to work. This is evident from the OLS analysis that in the measures of gross hourly wages; premium exists positively and significantly in all cases and is stronger for male sample, in the manufacturing sector and for blue collar workers. Whereas for measures of basic hourly wage, the size wage premium almost disappears.

Further we have also estimated OLS by introducing an interaction term in order to see that whether doubling the size will increase wage in all ranges of size for example small, medium or large. We have found that increase in wage by doubling the size is higher in large establishments with more than 300 employees compare to medium size establishments with 21 to 300 employees. But the coefficient for large establishment is not significant when we add control variables in the equation.

We have also estimated selectivity corrected wage equations in order to correct the selectivity bias associated with measuring wage equations as the heterogeneity in workers and employers attributes may result in the selection bias. Heckman two step estimation procedure has been followed for this purpose. Our results for ordered probit model suggests that male workers, more educated employees and manufacturing sector are mostly associated with large size category. Results for wage equation show significant selection term (λ), which indicates the existence of unobservable common to both the selection and wage determination process. Our results imply that workers are not matched based on pecuniary factors; therefore the wage gap is smaller between small and large establishments. The non random sorting or the observed pattern of sorting reduces the wage differential between small and large establishments.

Incorporating the selection bias into the wage equation has allowed us to produce unbiased estimates. Further it helped us to analyze the contribution of employee's

characteristics, evaluation of these characteristics by different size of employers and selectivity in the observed wage differentials across sizes. We found for the comparisons between largest and smallest group that the differential in the employees' characteristics contribute to 60 percent of the wage differentials. Workers with higher endowments would prefer to work in large establishments. Taking the coefficients from the wage equations we have further drawn the comparisons between employees who have matched to large employers and the employees who have matched to small employers. We found that an average employee would earn log wage of 7.062 higher then what he would get in small establishment. While taking into account the selectivity factor this differential drops to 6.952. Thus selectivity factor reduces the wage differential between large and small category of establishment size. Similarly an employee who has matched to small establishment would experience a log wage of 5.122, while taking into account the selectivity considerations, the log wage increases to 5.255. The joint result is that selectivity considerations reduce the wage differential between large and small establishments.

We may conclude that size does matter. Establishments depending on size have different attributes vis-à-vis same productive characteristics of workers. They don't behave in the same manner depending on the size. Different size establishments examine and evaluate differently the characteristics of workers. We have also seen the strong impact of compensation and pay practices paid by large employers in the gross and basic hourly wage analysis. Further research will be to analyze whether the difference in attitude by the size of establishment remains across gender. The big and small establishments are not identical while considering workers' characteristics. Therefore it will be interesting to analyze gender wage gap across size.

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7 APPENDIX

Table1. Summary Statistics

Variable	Observation	Mean	Std. Dev.	Min	Max
Gross Hourly Wage	131,069	66.52	31.56	30.55	232.92
Tenure	131,069	9.67	9	0	47
Experience	131,069	18.82	11	0	49
Establishment Size	131,069	386.99	1,034	2	22,238
Number of Children	131,069	1	1	0	15

Establishments classified by total number of employees and gender						
Total			Male		Female	
Establishment Size	Freq.	Percent	Freq.	Percent	Freq.	Percent
1-20 Employees	32,408	24.73	17,642	22.75	14,766	27.6
21-300 Employees	62,080	47.36	36,150	46.61	25,930	48.46
> 300 Employees	36,581	27.91	23,772	30.65	12,809	23.94
Total	131,069	100	77,564	100	53,505	100
Distribution of total Employees and gender by Level of Education						
Total			Male		Female	
Education	Freq.	Percent	Freq.	Percent	Freq.	Percent
Primary	23,877	26.55	14,413	27.57	9,464	25.13
Secondary	11,762	13.08	5,678	10.86	6,084	16.15
Technical Short	31,626	35.16	20,479	39.17	11,147	29.6
Technical Long	6,176	6.87	3,299	6.31	2,877	7.64
Higher	16,497	18.34	8,407	16.08	8,090	21.48
Total	89,938	100	52,276	100	37,662	100
Distribution of total employees and gender with respect to Industries						
Total			Male		Female	
Industry	Freq.	Percent	Freq.	Percent	Freq.	Percent
Manufacturing	47,989	36.61	35,761	46.11	12,228	22.85
Trade	15,824	12.07	8,000	10.31	7,824	14.62
Services	67,256	51.31	33,803	43.58	33,453	62.52
Total	131,069	100	77,564	100	53,505	100
Distribution by family situation						
Total			Male		Female	
Family situation	Freq.	Percent	Freq.	Percent	Freq.	Percent
Unmarried	40,329	30.77	23,202	29.91	17,127	32.01
Married	81,574	62.24	50,626	65.27	30,948	57.84
Widowed	1,573	1.2	394	0.51	1,179	2.2
Divorced	7,593	5.79	3,342	4.31	4,251	7.95
Total	131,069	100	77,564	100	53,505	100
Distribution by type of employment contract						
Total			Male		Female	
Contract Type	Freq.	Percent	Freq.	Percent	Freq.	Percent
CDI	112,607	90.52	68,254	92.08	44,353	88.23
CDD	11,787	9.48	5,872	7.92	5,915	11.77
Total	124,394	100	74,126	100	50,268	100
Distribution by type of Profession						
Total			Male		Female	

Profession Type	Freq.	Percent	Freq.	Percent	Freq.	Percent
Management and High Intellectual Professionals	13,277	10.13	9,808	12.65	3,469	6.48
High Skilled White Collar	30,559	23.32	18,038	23.26	12,521	23.4
Low Skilled White Collar	35,053	26.74	8,377	10.8	26,676	49.86
Blue collar	52,180	39.81	41,341	53.3	10,839	20.26
Total	131,069	100	77,564	100	53,505	100

Table 2 Mean of wage, tenure and experience in various categories of establishments

	1-20 Employees	**21-300 Employees**	**> 300 Employees**	**Total**	**Ratio**
Total					
Gross Hourly Wage	61.65	62.98	76.83	66.52	1.25
Tenure	6.88	8.61	13.96	9.67	2.03
Experience	18.00	18.21	20.60	18.82	1.14
Females					
Gross Hourly Wage	57.10	56.91	66.34	59.22	1.16
Tenure	6.73	8.25	12.52	8.85	1.86
Experience	17.86	17.70	19.50	17.90	1.09
Males					
Gross Hourly Wage	65.46	67.34	82.49	71.55	1.26
Tenure	7.01	8.86	14.74	10.24	2.10
Experience	18.11	18.57	21.19	19.27	1.17

Table3. Establishment Size-Wage effect with different control variables across size categories (Gross Hourly Wage)

Dependent variable log of gross hourly wage	1 to 20 Employees	21 to 300 Employees	> 300 Employees
Education Levels (base category primary education) Secondary	0.094**	0.101**	0.131**
	13.63	23.9	25.09
Technical Short	0.043**	0.065**	0.098**
	8.7	21.5	26.28
Technical Long	0.122**	0.137**	0.171**
	14.64	24.49	27.81
Higher	0.190**	0.201**	0.252**
	23.91	39.86	42.32
Gender (base category female)	0.113**	0.120**	0.141**
	23.86	43.46	44.35
Family Situation (base category unmarried) Married	0.01	0.024**	0.017**
	1.94	7.35	4.3
Widowed	-0.023	0.009	-0.003
	-1.09	0.82	-0.23
Divorced	0.012	0.019**	0.017*
	1.2	3.32	2.5
Number of Children	0.002	0.003*	0.006**
	-0.95	2.38	4.29
Experience	0.016**	0.014**	0.014**
	19.05	26.34	16.87
Tenure	0.011**	0.014**	0.010**
	13.46	27.1	13.89
Experience square	-0.000**	-0.000**	-0.000**
	-14	-21.19	-12.51
Tenure square	-0.000**	-0.000**	-0.000**
	-4.51	-9.66	-4.19
Type of Contract (base category CDI)	-0.032**	0.008	-0.132**
	-4.16	1.71	-14.87
Type of Profession (base category Management and High Intellectual Professionals) High Skilled White Collar	-0.415**	-0.443**	-0.410**
	-48.59	-79.82	-75.8
Low Skilled White Collar	-0.657**	-0.686**	-0.582**
	-71.39	-110.88	-85.36
Blue Collar	-0.739**	-0.752**	-0.624**
	-80.51	-125.79	-100.61
Type of Industry (base category Manufacturing) Trade	-0.031**	-0.055**	-0.053**
	-5.22	-13	-7.24
Services	-0.016**	-0.018**	-0.005
	-3.09	-6.34	-1.71

Constant	4.291** 261.53	4.272** 419.67	4.386** 300.37
Observations	18381	40138	26838
R-squared	0.59	0.64	0.64

** Significant at 5%; ** significant at 1% level. All results have been reported with robust standard errors, T statistics are reported below the coefficients.*

Table4. Establishment Size-Wage effect with different control variables across size categories (Basic Hourly Wage)

Dependent variable log of Basic hourly wage	1 to 20 Employees	21 to 300 Employees	> 300 Employees
Education Levels (base category primary education) Secondary	0.079**	0.093**	0.126**
	11.86	23.15	25.48
Technical Short	0.042**	0.064**	0.092**
	9.04	22.93	26.49
Technical Long	0.111**	0.126**	0.163**
	13.71	24.28	27.47
Higher	0.182**	0.203**	0.256**
	23.81	41.18	44.43
Gender (base category female)	0.088**	0.085**	0.103**
	19.13	32.32	33.14
Family Situation (base category unmarried) Married	0.01	0.021**	0.015**
	1.89	6.79	3.82
Widowed	-0.022	0.011	0.009
	-1.11	1.08	0.7
Divorced	0.01	0.008	0.022**
	1.11	1.51	3.27
Number of Children	-0.002	-0.003*	0
	-1.1	-2.14	-0.25
Experience	0.015**	0.014**	0.016**
	19.32	28.59	20.46
Tenure	0.005**	0.005**	0.002**
	6.03	11.45	2.87
Experience square	-0.000**	-0.000**	-0.000**
	-13.93	-22.77	-15.82
Tenure square	0	0	0.000**
	-1.95	-0.29	4.88
Type of Contract (base category CDI)	-0.041**	-0.031**	-0.142**
	-5.69	-7.77	-16.61
Type of Profession (base category Management and High Intellectual Professionals) High Skilled White Collar	-0.425**	-0.467**	-0.472**
	-50.16	-81.57	-82.91
Low Skilled White Collar	-0.659**	-0.713**	-0.649**
	-73.11	-114.28	-92.21
Blue Collar	-0.735**	-0.781**	-0.715**
	-82.01	-128.62	-111.94
Type of Industry (base category Manufacturing) Trade	-0.044**	-0.042**	-0.042**
	-7.86	-10.48	-5.74
Services	-0.023**	-0.021**	0.004
	-4.8	-7.85	-1.29

Constant	4.249** 271.31	4.248** 427.3	4.304** 307.28
Observations	18331	40074	26823
R-squared	0.58	0.65	0.67

** Significant at 5%; ** significant at 1% level*
All results have been reported with robust standard errors, T statistics are reported below the coefficients

Table5. Establishment Size-Wage Elasticity (Gross Hourly Wage)

Dependent variable log of gross hourly wage	Total	Male	Female
Log of Estab size	0.023** 41.98	0.027** 37.83	0.018** 22
Education Levels (base category primary education) Secondary	0.109** 36.26	0.100** 23.74	0.106** 24.72
Technical Short	0.071** 33.02	0.062** 22.95	0.065** 18.42
Technical Long	0.144** 38.7	0.137** 26.34	0.136** 25.4
Higher	0.213** 60.74	0.205** 41.49	0.203** 39.8
Gender (base category female)	0.124** 63.97		
Family Situation (base category unmarried) Married	0.019** 8.35	0.041** 12.69	-0.005 -1.46
Widowed	-0.001 -0.18	0.027 1.74	-0.015 -1.61
Divorced	0.016** 3.83	0.020** 3.33	0.01 1.8
Number of Children	0.004** 4.12	0.003** 2.79	0 -0.24
Experience	0.015** 37.68	0.017** 31.38	0.013** 22.95
Tenure	0.012** 34.41	0.011** 22.9	0.012** 23.08
Experience square	-0.000** -29.06	-0.000** -24.6	-0.000** -17.41
Tenure square	-0.000** -12.18	-0.000** -8.68	-0.000** -6.54
Type of Contract (base category CDI)	-0.032** -9.14	-0.042** -8.04	-0.021** -4.42
Type of Profession (base category Management and High Intellectual Professionals) High Skilled White Collar	-0.428** -119.09	-0.433** -99.54	-0.421** -60.81
Low Skilled White Collar	-0.648** -156.91	-0.678** -122.87	-0.648** -89.91
Blue Collar	-0.708** -179.09	-0.688** -143.56	-0.780** -100.38
Trade	-0.040** -13.05	-0.024** -5.66	-0.068** -14.98
Services	-0.014** -7.13	-0.005* -2.25	-0.035** -10.7

Constant	4.190** 550.56	4.268** 422.52	4.267** 368.32
Observations	85357	50120	35237
R-squared	0.64	0.65	0.6

** Significant at 5%; ** significant at 1% level*
All results have been reported with robust standard errors, T statistics are reported below the coefficients

Table6. Establishment Size-Wage Elasticity (Basic Hourly Wage)

Dependent variable log of basic hourly wage	Total	Male	Female
Log of Estab size	0.003**	0.005**	0
	4.99	6.73	0.53
Education Levels (base category primary education) Secondary	0.100**	0.098**	0.092**
	34.98	24.05	22.85
Technical Short	0.068**	0.070**	0.055**
	34.14	27.21	16.89
Technical Long	0.134**	0.133**	0.125**
	37.9	26.67	24.62
Higher	0.216**	0.224**	0.195**
	63.51	46.4	39.98
Gender (base category female)	0.091**		
	49.16		
Family Situation (base category unmarried) Married	0.017**	0.035**	-0.006
	7.73	11.26	-1.8
Widowed	0.003	0.030*	-0.013
	0.46	2.01	-1.49
Divorced	0.012**	0.017**	0.002
	2.98	2.91	0.47
Number of Children	-0.002*	-0.003*	-0.005**
	-2.48	-2.48	-3.47
Experience	0.015**	0.017**	0.013**
	40.9	32.65	25.91
Tenure	0.004**	0.003**	0.005**
	13.1	7.53	9.53
Experience square	-0.000**	-0.000**	-0.000**
	-31.61	-25.7	-19.73
Tenure square	0	0.000**	0
	-1.91	-2.81	-0.54
Type of Contract (base category CDI)	-0.056**	-0.066**	-0.045**
	-17.04	-13.56	-10.27
Type of Profession (base category Management and High Intellectual Professionals) High Skilled White Collar	-0.461**	-0.467**	-0.437**
	-125.4	-105.52	-61.27
Low Skilled White Collar	-0.683**	-0.713**	-0.662**
	-164.94	-130.66	-90.09
Blue Collar	-0.751**	-0.741**	-0.779**
	-188.95	-153.48	-99.97
Type of Industry (base category Manufacturing) Trade	-0.040**	-0.021**	-0.074**
	-13.71	-5.03	-17.14
Services	-0.017**	-0.005*	-0.042**
	-9.1	-2.21	-13.56
Constant	4.240**	4.297**	4.288**
	579.69	439.36	386.36
Observations	85228	50028	35200

R-squared	0.65	0.67	0.59

** Significant at 5%; ** significant at 1% level*
All results have been reported with robust standard errors, T statistics are reported below the coefficients

Table 7. Establishment Size-Wage Gap with interaction term

Dependent variable log of gross hourly wage	With interaction	Adding control variables
Log of Est. Size	0.041** 15.61	0.024** 11.61
Log of Est. Size*Dummy for big est.	0.008** 4.48	-0.001 -1.06
Log of Est. Size*Dummy for medium est.	-0.011** -7.83	-0.007** -6.88
Secondary		0.108** 36.77
Technical Short		0.070** 32.3
Technical Long		0.143** 38.68
Higher		0.212** 64.94
Gender		0.123** 65.32
Married		0.019** 8.29
Widowed		-0.001 -0.15
Divorced		0.016** 4.14
Nbre d'enf.		0.004** 4.4
Experience		0.015** 39.91
Tenure		0.012** 35.93
Experience square		-0.000** -31.15
Tenure square		-0.000** -12.85
Type of Contract		-0.030** -9.41
High Skilled White Collar		-0.428** -143.07
Low Skilled White Collar		-0.648** -186.46
Blue Collar		-0.706** -210.53
Trade		-0.039** -12.9
Services		-0.009**

		-4.77
Constant	3.933** 610.51	4.198** 510.45
Observations	131069	85357
R-squared	0.06	0.65

** Significant at 5%; ** significant at 1% level, T statistics are reported below the coefficients*

Table 8 Results for Ordered Probit Estimates and Marginal Effects

Dependent Variable Size of Establishment (0,1,2 small, medium, large)	Results of Ordered Probit	Marginal Effects for outcome small size category	Marginal Effects for outcome medium size category	Marginal Effects for outcome large size category
		Probability .188	Probability .483	Probability .338
	Coef.	dy/dx	dy/dx	dy/dx
Experience total	0.01***	0.00***	0.00***	0.00***
Gender (base category = Female)	0.10***	-0.03***	-0.01***	0.03***
Education dummies (base category = primary education)				
Secondary	0.17***	-0.05***	-0.02***	0.06***
Technical Short	0.10***	-0.03***	-0.01***	0.03***
Technical Long	0.18***	-0.05***	-0.02***	0.07***
Higher	0.32***	-0.08***	-0.04***	0.12***
Industry type dummies (base category = manufacturing)				
Trade	-1.02***	0.36***	-0.09***	-0.27***
Services	-0.54***	0.15***	0.04***	-0.19***
/cut1	-0.83			
/cut2	0.50			
No. of Observation	89938			

Note: *** p<0.01, ** p<0.05, * p<0.1

Table 9. Wage Equation Estimates by Employer Size

Dependent variable Log of hourly wage	All	Small	Medium	Large
Tenure	0.012** 30.23	0.011** 12.19	0.011** 18.41	0.005** 7.47
Tenure Sq.	0 -0.6	0 -1.76	0 0.88	0.000** 4.01
Experience total	0.026** 59.01	0.027** 29.55	0.026** 42.37	0.026** 29.96
Experience total Sq.	-0.000** -44.21	-0.000** -21.08	-0.000** -32.78	-0.000** -21.83
Gender (base category = Female)	0.176** 87.26	0.157** 32.06	0.162** 52.94	0.183** 50.12
Number of Children	0.008** 8.03	0 1.53	0.005** 3.42	0.011** 7.5
Education dummies (base category = primary education)				
Secondary	0.261** 76.14	0.263** 33.95	0.250** 50.46	0.267** 45.75
Technical Short	0.124** 47.57	0.095** 15.83	0.118** 30.87	0.145** 33.28
Technical Long	0.351** 81.6	0.326** 33.27	0.352** 54.33	0.346** 49.42
Higher	0.613** 193.06	0.588** 77.09	0.600** 124.3	0.607** 112.41
Λ		0.044** 4.91	-0.026** -4.67	-0.058** -7.43
Σ		0.32	0.29	0.27
P		0.14	-0.09	-0.21
Constant	3.421**	3.474**	3.421**	3.563**
	838.85	276.820	575.25	267.62
Observations	89938	19,474	41692	28772
R-squared	0.43	0.36	0.42	0.44

** Significant at 5%; ** significant at 1% level, T statistics are reported below the coefficients*

Table 10 Size-Wage Gap with Interaction term with measure of Basic hourly wage

Dependent variable log of Basic hourly wage	With interaction	Adding control variables
Log of Est. Size	0.015** 5.64	0.003 1.57
Log of Est. Size*Dummy for big est.	0.008** 4.41	-0.001 -0.67
Log of Est. Size*Dummy for medium est.	-0.010** -7.71	-0.007** -6.37
Secondary		0.100** 35.37
Technical Short		0.068** 32.58
Technical Long		0.134** 37.85
Higher		0.215** 68.95
Gender		0.091** 50.35
Married		0.017** 7.67
Widowed		0.004 0.5
Divorced		0.012** 3.26
Nbre d'enf.		-0.002* -2.35
Experience		0.015** 42.26
Tenure		0.004** 13.52
Experience square		-0.000** -32.62
Tenure square		0.000* -1.97
Type of Contract		-0.054** -17.6
High Skilled White Collar		-0.460** -161.31
Low Skilled White Collar		-0.682** -205.79
Blue Collar		-0.749** -234.18
Trade		-0.039** -13.78
Services		-0.013**

		-6.86
Constant	3.881** 617.71	4.249** 541.88
Observations	130719	85228
R-squared	0.02	0.65

** Significant at 5%; ** significant at 1% level, T statistics are reported below the coefficients*

Table 11 Establishment Size-Wage Elasticity across Industries (Gross Hourly Wage)

Dependent variable log of gross hourly wage	Manufacturing	Trade	Service
Log of Estab size	0.032** 38.2	0.016** 9.17	0.018** 22.41
Secondary	0.100** 18.59	0.049** -6.03	0.121** -29.83
Technical Short	0.076** 23.16	0.017** -2.65	0.074** -23.65
Technical Long	0.137** -22.08	0.102** -8.95	0.150** -29.32
Higher	0.224** -35.06	0.172** -14.79	0.215** -46.28
Sex	0.145** -44.74	0.112** -18.51	0.112** -41.92
Married	0.023** -6.03	0.004 -0.51	0.021** -6.38
Widowed	0.001 -0.05	0.027 -0.88	-0.004 -0.39
Divorced	0.028** -3.9	0 -0.03	0.013* -2.5
Nbre d'enf.	0.004** -2.9	-0.001 -0.46	0.004** -3.36
Experience	0.016** -22.22	0.015** -12.75	0.015** -28.09
Tenure	0.008** -13.5	0.011** -10.18	0.014** -28.37
Experience square	-0.000** -15.06	-0.000** -9.07	-0.000** -23.86
Tenure square	-0.000** -5.74	-0.000** -4.36	-0.000** -7.05
Type of Contract	-0.036** -4.86	-0.050** -5.33	-0.021** -4.72
High Skilled White Collar	-0.416** -71.66	-0.404** -32.41	-0.440** -87.39
Low Skilled White Collar	-0.586** -79.36	-0.692** -54.92	-0.657** -117.94
Blue Collar	-0.693** -107.91	-0.738** -58.94	-0.698** -123.51
Constant	4.122** -301.86	4.286** -199.84	4.182** -421.12
Observations	31490	9303	44564
R-squared	0.66	0.61	0.64

** Significant at 5%; ** significant at 1% level.All results have been reported with robust standard errors*

Table 12 Establishment Size-Wage Elasticity across Professions (Gross Hourly Wage)

	Management and High Intellectual Professionals	High Skilled White Collar	Low Skilled White Collar	Blue Collar
Log of Estab size	0.014**	0.016**	0.017**	0.038**
	-7.27	-15.77	-17.29	-45.85
Secondary	0.039*	0.083**	0.091**	0.089**
	-2.57	-11.72	-19.33	-17.37
Technical Short	-0.061**	0.018**	0.053**	0.077**
	-3.95	-2.98	-13.15	-27.21
Technical Long	0.029	0.091**	0.147**	0.180**
	-1.8	-12.8	-23.68	-20.27
Higher	0.196**	0.163**	0.193**	0.214**
	-13.75	-24.74	-27.97	-13.89
Sex	0.098**	0.094**	0.074**	0.193**
	-13.24	-26.55	-20.25	-63.97
Married	0.045**	0.015**	0.001	0.034**
	-5.03	-3.2	-0.13	-9.55
Widowed	0.021	-0.002	-0.026*	0.029*
	-0.55	-0.13	-2.23	-2.3
Divorced	0.036*	0.003	0.005	0.032**
	-2.35	-0.43	-0.66	-4.88
Nbre d'enf.	0.020**	0.005**	0.002	-0.001
	-6.26	-2.72	-1.16	-0.62
Experience	0.028**	0.018**	0.012**	0.011**
	-18.52	-20.37	-16.66	-19.4
Tenure	0.002	0.007**	0.016**	0.014**
	-1.27	-10.22	-23.31	-26.27
Experience square	-0.000**	-0.000**	-0.000**	-0.000**
	-11.8	-12.88	-13.55	-16.8
Tenure square	0	-0.000**	-0.000**	-0.000**
	-0.61	-2.8	-6.37	-10.45
Type of Contract	-0.149**	-0.041**	-0.029**	-0.009
	-7.01	-4.02	-5.85	-1.82
Trade	-0.049**	-0.025**	-0.095**	-0.017**
	-4.13	-3.47	-17.35	-3.65
Services	-0.016*	-0.031**	-0.049**	0.004
	-2.42	-7.93	-11.04	-1.59
Constant	4.274**	3.853**	3.643**	3.347**
	-130.08	-250.19	-348.43	-353.4
Observations	9623	22446	22623	30665
R-squared	0.26	0.26	0.32	0.39

** Significant at 5%; ** significant at 1% level.All results have been reported with robust standard errors*

Table 13 Establishment Size-Wage Elasticity across Industries (Basic Hourly Wage)

	Manufacturing	Trade	Service
Log of Estab size	0.006**	0	0
	-7.88	-0.11	-0.5
Secondary	0.108**	0.059**	0.097**
	-21.3	-7.31	-25.06
Technical Short	0.085**	0.026**	0.061**
	-28.29	-4.08	-20.85
Technical Long	0.150**	0.089**	0.127**
	-26.52	-7.96	-25.43
Higher	0.251**	0.175**	0.205**
	-41.83	-15.15	-45.42
Sex	0.099**	0.088**	0.081**
	-32.97	-14.7	-31.24
Married	0.021**	0.004	0.017**
	-6.14	-0.55	-5.35
Widowed	0.007	0.031	-0.003
	-0.53	-1.07	-0.35
Divorced	0.024**	0.001	0.006
	-3.75	-0.05	-1.16
Nbre d'enf.	-0.002	-0.004	-0.002
	-1.45	-1.31	-1.46
Experience	0.016**	0.014**	0.015**
	-25.65	-13	-29.71
Tenure	0.001	0.004**	0.007**
	-1.28	-3.27	-13.85
Experience square	-0.000**	-0.000**	-0.000**
	-17.92	-9.02	-25.35
Tenure square	0.000**	0	0.000*
	-3.61	-1.08	-2.05
Type of Contract	-0.048**	-0.060**	-0.050**
	-7.48	-7.1	-12.1
High Skilled White Collar	-0.467**	-0.441**	-0.457**
	-81.04	-35.37	-87.65
Low Skilled White Collar	-0.641**	-0.714**	-0.678**
	-89.52	-56.96	-119.88
Blue Collar	-0.771**	-0.754**	-0.713**
	-121.58	-61.09	-124.31
Constant	4.206**	4.280**	4.221**
	-335.1	-205.47	-437.1
Observations	31468	9286	44474
R-squared	0.69	0.6	0.63

** Significant at 5%; ** significant at 1% level*
All results have been reported with robust standard errors

Table 14 Establishment Size-Wage Elasticity across Professions (Basic Hourly Wage)

	Management and High Intellectual Professionals	High Skilled White Collar	Low Skilled White Collar	Blue Collar
Log of Estab size	0.005*	-0.003**	-0.001	0.009**
	-2.49	-2.91	-1.39	-12.38
Secondary	0.050**	0.080**	0.080**	0.085**
	-3.14	-11.29	-18.49	-18.02
Technical Short	-0.035*	0.025**	0.042**	0.081**
	-2.21	-4.13	-11.65	-31.17
Technical Long	0.054**	0.094**	0.125**	0.167**
	-3.24	-13.4	-22.2	-21.16
Higher	0.240**	0.175**	0.177**	0.217**
	-16.41	-26.82	-27.81	-15.72
Sex	0.089**	0.074**	0.048**	0.122**
	-11.54	-20.9	-14.07	-45.7
Married	0.044**	0.010*	-0.003	0.032**
	-4.68	-2.08	-0.67	-9.99
Widowed	0.023	0.001	-0.025*	0.034**
	-0.6	-0.04	-2.33	-3.01
Divorced	0.021	0.006	-0.001	0.026**
	-1.3	-0.7	-0.09	-4.47
Nbre d'enf.	0.018**	-0.003	-0.003	-0.006**
	-5.41	-1.44	-1.9	-5.77
Experience	0.026**	0.019**	0.012**	0.011**
	-16.73	-21.38	-19.3	-22.25
Tenure	-0.004**	0.001	0.007**	0.007**
	-3.13	-1.23	-11.34	-14.66
Experience square	-0.000**	-0.000**	-0.000**	-0.000**
	-10	-13.49	-16.23	-19.38
Tenure square	0.000**	0.000**	0	-0.000*
	-3.59	-2.9	-0.94	-2.39
Type of Contract	-0.147**	-0.050**	-0.056**	-0.047**
	-6.47	-4.98	-12.99	-11.12
Trade	-0.061**	-0.044**	-0.111**	0
	-5.13	-6.1	-21.89	-0.04
Services	-0.049**	-0.040**	-0.071**	0.028**
	-6.86	-10.62	-17.41	-10.72
Constant	4.213**	3.829**	3.684**	3.426**
	-121.42	-247.92	-393.32	-417.78
Observations	9582	22410	22595	30641
R-squared	0.22	0.17	0.23	0.25

** Significant at 5%; ** significant at 1% level*
All results have been reported with robust standard errors

Table 15 Summary Statistics (Basic Hourly Wage)

Variable	Observation	Mean	Std. Dev.	Min	Max
Basic Hourly Wage	130719	55.75064	26.42297	25.74186	200.2211
Tenure	130719	9.672291	8.860427	0	46.5
Experience	130719	18.80255	10.62095	0	49
Establishment Size	130719	387.2847	1031.442	2	22238
Number of Children	130719	.9721617	1.161508	0	15

Establishments classified by total number of employees and gender						
Total			Male		Female	
Establishment Size	Freq.	Percent	Freq.	Percent	Freq.	Percent
1-20 Employees	32,286	24.70	17,549	22.70	14,737	27.60
21-300 Employees	61,892	47.35	36,016	46.58	25,876	48.46
> 300 Employees	36,541	27.95	23,758	30.73	12,783	23.94
Total	130,719	100	77,323	100	53,396	100

Distribution of total Employees and gender by Level of Education						
Total			Male		Female	
Education	Freq.	Percent	Freq.	Percent	Freq.	Percent
Primary	23,816	26.53	14,376	27.55	9,44	25.10
Secondary	11,744	13.08	5,665	10.86	6,079	16.17
Technical Short	31,598	35.19	20,456	39.20	11,142	29.63
Technical Long	6,194	6.90	3,309	6.34	2,885	7.67
Higher	16,433	18.30	8,376	16.05	8,057	21.43
Total	89,785	100	52,182	100	37,603	100

Distribution of total employees and gender with respect to Industries						
Total			Male		Female	
Industry	Freq.	Percent	Freq.	Percent	Freq.	Percent
Manufacturing	47,854	36.61	35,659	46.12	12,195	22.84
Trade	15,792	12.08	7,974	10.31	7,818	14.64
Services	67,073	51.31	33,69	43.57	33,383	62.52
Total	130,719	100	77,323	100	53,396	100

Distribution by family situation						
Total			Male		Female	
Family situation	Freq.	Percent	Freq.	Percent	Freq.	Percent
unmarried	40,302	30.83	23,147	29.94	17,155	32.13
married	81,295	62.19	50,46	65.26	30,835	57.75
widowed	1,565	1.20	387	0.50	1,178	2.21
divorced	7,557	5.78	3,329	4.31	4,228	7.92
Total	130,719	100	463,936	100	53,396	100

Distribution by type of employment contract						
Total			Male		Female	
Contract Type	Freq.	Percent	Freq.	Percent	Freq.	Percent
CDI	112,239	90.46	68,026	92.06	44,213	88.11
CDD	11,832	9.54	5,865	7.94	5,967	11.89
Total	124,071	100	73,891	100	50,180	100

Distribution by type of Profession						
Total			Male		Female	
Profession Type	Freq.	Percent	Freq.	Percent	Freq.	Percent
Management and High Intellectual Professionals	13,216	10.11	9,787	12.66	3,429	6.42
High Skilled White Collar	30,494	23.33	17,981	23.25	12,513	23.43
Low Skilled White Collar	34,963	26.75	8,334	10.78	26,629	49.87
Blue collar	52,046	39.82	41,221	53.31	10,825	20.27
Total	130,719	100	77,323	100	53,396	100

Table 16 Descriptive Statistics by Mean Wage (Gross Hourly Wage)

Mean Wage in Establishments classified by total number of employees and gender									
Total				Male			Female		
Size Category	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
1-20 Employees	61.65	30.45	32408	57.1	25.59	14766	65.46	33.52	17642
21-300 Employees	62.98	29.97	62080	56.91	24.45	25930	67.34	32.65	36150
> 300 Employees	76.83	32.8	36581	66.34	26.1	12809	82.49	34.6	23772
Total	66.52	31.56	131069	59.22	25.51	53505	71.55	34.24	77564
Mean Wage by Level of Education of Employees									
Total				Male			Female		
Education	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Primary	57.38	22.53	23877	50.64	18.07	9464	61.8	24.01	14413
Secondary	68.81	31.36	11762	60.54	23.93	6084	77.66	35.66	5678
Technical Short	62.612	23.21	31626	56.27	18.78	11147	66.06	24.62	20479
Technical Long	75.13	31.59	6176	63.63	23.07	2877	85.14	34.47	3299
Higher	93.97	42.17	16497	79.64	32.44	8090	107.74	45.71	8407
Total	68.64	31.85	89938	61.13	25.58	37662	74.05	34.69	52276
Mean Wage by type of industry									
Total				Male			Female		
Industry	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Manufacturing	69.42	32.21	47989	59.82	25.84	12228	72.7	33.49	35761
Trade	60.32	29.44	15824	53.32	22.09	7824	67.17	33.8	8000
Services	65.89	31.33	67256	60.37	25.93	33453	71.36	35.03	33803
Total	66.51	31.56	131069	59.21	25.5	53505	71.55	34.24	77564
Distribution by family situation									
Total				Male			Female		
Family situation	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
unmarried	57.86	25.48	40329	56.35	24.51	17127	58.98	26.12	23202
married	70.75	33.4	81574	60.37	25.63	30948	77.1	35.91	50626
widowed	63.14	30.12	1573	57.65	24.25	1179	79.6	38.78	394
divorced	67.59	31.3	7593	62.78	27.64	4251	73.7	34.46	3342
Total	66.51	31.56	131069	59.21	25.5	53505	71.55	34.24	77564
Distribution by type of employment contract									
Total				Male			Female		

Contract Type	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
CDI	68.22	32.11	112607	60.36	25.9	44353	73.32	34.63	68254
CDD	51.71	24.21	11787	49.66	22.18	5915	53.78	25.94	5872
Total	66.65	31.82	124394	59.1	25.72	50268	71.78	34.43	74126
Distribution by type of Profession									
Total				Male			Female		
Profession Type	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Management and High Intellectual Professionals	127.48	41.16	13277	114.69	39.48	3469	132	40.79	9808
High Skilled White Collar	77.8	23.18	30559	72.74	20.5	12521	81.31	24.26	18038
Low Skilled White Collar	52.28	15.99	35053	51.38	14.98	26676	55.15	18.56	8377
Blue collar	53.95	16.45	52180	45.1	11.32	10839	56.27	16.8	41341
Total	66.51	31.56	131069	59.21	25.5	53505	71.55	34.24	77564

Table 17 Descriptive Statistics by Mean Wage (Basic Hourly Wage)

Mean Wage in Establishments classified by total number of employees and gender									
Total				Male			Female		
Size Category	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
1-20 Employees	54.33	25.78	32286	57.2	28.49	17549	50.91	21.61	14737
21-300 Employees	53.41	25.41	61892	56.47	27.95	36016	49.15	20.62	25876
> 300 Employees	60.98	27.91	36541	64.75	30.15	23758	53.98	21.51	12783
Total	55.75	26.42	130719	59.16	29	77323	50.79	21.2	53396
Mean Wage by Level of Education of Employees									
Total				Male			Female		
Education	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Primary	47.08	16.94	23816	49.64	18.57	14376	43	13.16	9440
Secondary	57.17	25.31	11744	63.51	29.27	5665	51.26	19.15	6079
Technical Short	51.46	18.27	31598	53.65	19.57	20456	47.44	14.79	11142
Technical Long	62.41	25.94	6194	69.54	28.97	3309	54.23	18.9	2885
Higher	80.4	36.69	16433	92.1	39.69	8376	68.24	28.59	8057
Total	57.1	26.63	89785	60.8	29.35	52182	51.97	21.28	37603
Mean Wage by type of industry									
Total				Male			Female		
Industry	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Manufacturing	56.1	27.01	47854	59.12	28.42	35659	50.79	21.18	12195
Trade	52.17	24.79	15792	57.46	28.65	7974	46.76	18.62	7818
Services	55.71	26.29	67073	59.65	29.68	33690	51.73	21.66	33383
Total	55.75	26.42	130719	59.17	29	77323	50.79	21.2	53396
Distribution by family situation									
Total				Male			Female		
Family situation	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
unmarried	49.71	21.56	40302	50.16	22.2	23147	49.1	20.66	17155
married	58.71	28.1	81295	63.13	30.71	50460	51.48	21.3	30835
widowed	52.98	24.09	1565	64.58	31.46	387	49.16	19.69	1178
divorced	56.67	26.3	7557	61.26	29.85	3329	53.07	22.47	4228
Total	55.75	26.42	130719	59.18	29	77323	50.79	21.2	53396
Distribution by type of employment contract									

Total				Male			Female		
Contract Type	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
CDI	57.04	26.87	112239	60.455	29.36	68026	51.78	21.48	44213
CDD	44.69	21.19	11832	45.76	22.54	5865	43.64	19.71	5967
Total	55.86	26.63	124071	59.29	29.15	73891	50.81	21.44	50180
Distribution by type of Profession									
Total				Male			Female		
Profession Type	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency	Mean	Standard Deviation	Frequency
Management and High Intellectual Professionals	110.16	35.75	13216	113.72	35.37	9787	100.01	34.89	3429
High Skilled White Collar	64.59	18.46	30494	66.71	19.22	17981	61.55	16.89	12513
Low Skilled White Collar	44.6	11.71	34963	46.21	13.84	8334	44.1	10.96	26629
Blue collar	44.24	11.13	52046	45.56	11.43	41221	39.22	8.12	10825
Total	55.75	26.42	130719	59.16	29	77323	50.79	21.2	53396