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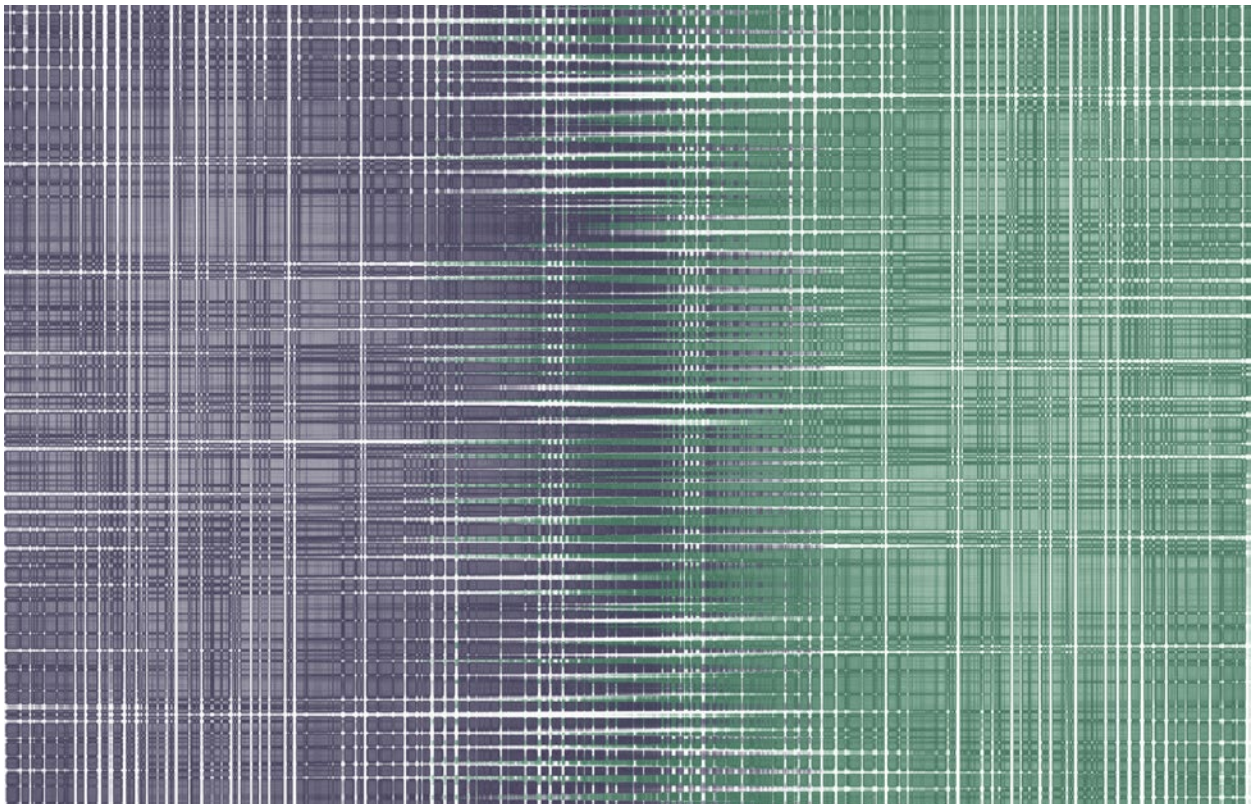

The role of informal wage negotiations and formal promotion processes in explaining the gender wage gap

M. Gray and S. Shankar

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The role of informal wage negotiations and formal promotion processes in explaining the gender wage gap

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Abstract

This paper provides estimates of the impact of gender differences in attempts to negotiate over wages and in wage outcomes of formal promotion processes. The research concerns a question about which there is little survey-based empirical evidence. The paper extends the existing literature by using large-scale survey data from the Australian Workplace Relations Survey 2014. The main findings are that women are less likely to attempt to negotiate over their wages and, if they do attempt negotiation, are less likely to be successful. There are no gender differences in application for promotion or in success rates, but successful promotion applications have a slightly larger positive impact on the wages of men.

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Acronyms

ABS	Australian Bureau of Statistics
AME	average marginal effect
AWRS2014	Australian Workplace Relations Survey 2014

Contents

Tables and figures

1 Introduction

A long-term focus of research has been understanding the reasons that women are paid, on average, a lower hourly wage than men. A range of explanations have been proposed, including gender differences in characteristics that affect wages (e.g. human capital, caring responsibilities), gender differences in the types of jobs held, and discrimination in the workplace. The extensive empirical literature suggests that all of these explanations play a role (Blau & Kahn 2016).

In reviewing explanations for the gender wage gap, Blau and Kahn (2016) concluded that human capital factors are relatively unimportant in explaining the gap, but that women's shorter working hours and workforce interruptions due to caring responsibilities are important. They also concluded that factors such as gender differences in occupation and industry of employment, gender roles, the gender division of labour, and discrimination are factors in explaining the gender wage gap. However, a substantial part of the gender wage gap is apparently not accounted for by these types of explanations.

One potential explanation is that there are gender differences in attempts to negotiate over wages and the success of such attempts. Despite strong evidence of gender differences in bargaining behaviour,[1] there is little empirical evidence about the extent to which there are gender differences in bargaining over wages and the impact of any differences on the gender wage gap. Studies on this issue have generally been based on surveys of very specific groups (e.g. Swedish social science graduates) or take the form of psychological experiments. Studies based on surveys and psychological experiments have identified gender differences in bargaining behaviour, with evidence that women are less likely than men to seek to negotiate over their salary. An overview of this literature is provided in Section 2.

Indirect support for the potential role of gender differences in individual negotiation over wages is also provided by the findings of empirical studies that more centralised wage-fixing processes – which provide a smaller scope for individual wage negotiation – result in a smaller gender wage gap (e.g. Barón & Cobb-Clark 2010).

An important question is whether there are gender differences in individual-level wage outcomes that depend on whether the negotiations are informal or occur in more formal promotion processes. Using data from the British Household Panel Survey, Booth et al. (2003) found that there is little gender difference in promotion rates (at least among full-time employees), but that, relative to their nonpromoted counterparts, the wages of promoted men increase faster than those of promoted women. The study referred to the role of promotion in concluding that 'it may very well increase the disadvantage, not through a lower promotion probability, but through a lower wage reward over time to promotion' (Booth et al. 2003:319).

Research into the impact of gender differences in individual-level negotiation over wages has been limited by a lack of suitable large-scale survey data comprising the necessary questions. This paper uses data from a new nationwide survey, the Australian Workplace Relations Survey 2014 (AWRS2014), to estimate the extent of gender differences in the likelihood of negotiation over wages, and the impact that these differences have on wages. The gender differences in negotiation over wages are compared with gender differences in the use of formal promotion processes as a way of attempting to gain a wage increase, and the impact on wages of these differences. The comparison of negotiation with a manager or employer with formal promotion processes provides insight into the extent to which formal processes and the built-in safeguards against discrimination are effective in reducing gendered workplace outcomes.

The AWRS2014 has been used because it contains questions about whether employees had applied for promotion, whether they had attempted to negotiate with their manager regarding their wage, and the success of these attempts. We are not aware of other large-scale Australian surveys that ask respondents about whether they attempted to conduct wage negotiations with their manager or employer.[2]

This paper:

- describes differences between men and women in patterns of application for, and success of, formal promotion when compared with informal negotiation over wages
- estimates the extent to which these gender differences remain after differences in human capital, demographic and job characteristics are taken into account
- estimates the differential impact of promotion and informal negotiation on hourly wages of men and women.

The paper is structured as follows. Section 2 describes the relevant elements of the AWRS2014 dataset, and benchmarks wages estimated from the AWRS2014 against Australian Bureau of Statistics (ABS) data. Section 3 describes patterns of application for promotion and informal negotiation. Section 4 comprises estimates of the extent to which there are gender differences in promotion applications and outcomes, and negotiation attempts and outcomes. Section 5 provides estimates of the impact of negotiation and promotion on wages for men and women, and an assessment of the extent to which there are gender differences. Finally, Section 6 provides some conclusions.

2 Summary of selected relevant literature on gender differences in negotiation behaviour

An extensive psychological literature, based on laboratory experiments and field trials, reports research into gender differences in negotiating and bargaining behaviour. Although the findings from this literature are mixed, overall they suggest that gender stereotypes and gendered behavioural constraints limit women's ability to negotiate access to opportunities and resources. In an article reviewing the psychological literature on gender differences in negotiation, Bowles (2012:4) described how the literature on gender differences in negotiation initially focused on gender as a personality variable, and then by the mid-1990s had shifted to focus on the social construction of gender and the role of situational factors that might moderate gender effects in negotiation. Walters et al. (1998) conducted meta-analysis of research into gender differences in negotiator competitiveness. They concluded that:

> … women appear to behave more cooperatively in negotiations than men, but this difference is slight. Results suggest that constraints on negotiators (imposed by abstract bargaining paradigms and restrictions on communication) lessen gender differences in negotiation behavior. Women were significantly more competitive than men when competing against an opponent who pursued a 'tit-for-tat' bargaining strategy. (1998:1)

Related meta-analysis by Stuhlmacher and Walters (1999) examined studies concerning negotiation over compensation or negotiation over profits from sales, concluding:

> … men negotiated significantly better outcomes than women. Opponent sex, relative power of the negotiator, integrative potential of the task, mode of communication and year of the study were tested as moderators of the effect. Although the overall difference in outcomes between men and women was small, none of these hypothesized moderators or several exploratory moderators reversed or eliminated this effect. (1999:653)

Experimental studies of gender differences in wage-bargaining behaviour generally confirm gender differences in bargaining behaviour and dynamics in relation to wages. For example, Dittrich et al. (2014) found that female employees negotiate lower wages than male employees, and that this is true irrespective of whether they are negotiating with a female or male manager/employer. They interpret these findings as indicating that men bargain more successfully over wages than do women. However, there was no difference in wages agreed to between female and male employers. Bowles et al. (2007) used bargaining experiments to investigate the extent to which gender difference in the propensity to initiate negotiations over wages may be explained by gender differences in the treatment of men and women when they attempt to negotiate. They found that differential treatment of men and women when they attempt to negotiate their salary is an explanation for the differential propensities to negotiate. Their experiments suggest that male evaluators ('employers') penalised women more than men for attempting to negotiate a higher wage, and that ' … women were more reticent than men about attempting to negotiate for higher compensation with a male evaluator, and nervousness about attempting to negotiate explained this gender difference' (Bowles et al. 2007:99). Bowles et al. (2007) also found that women are penalised more for attempting to negotiate a higher wage because this behaviour violates expectations about women's behaviour.

Studies based on survey data have found that women are less likely to seek to negotiate over their salary (e.g. Gerhart & Rynes 1991, Babcock & Laschever 2003, Babcock et al. 2006, Greig 2008,

Hall & Kreuger 2008).[3] There is also evidence that men who negotiate over their salary receive a higher salary than women (e.g. Gerhart & Rynes 1991).

There may also be gender differences in bargaining power. These could arise in various ways, largely related to men potentially having greater power in the labour market.

Empirical literature based on surveys of academics provides evidence that male academics are more likely to receive outside offers – or are more able to obtain them – than female academics, and this is expected to be a factor in a higher success rate in wage negotiations. McDowell et al. (1999, 2001) found evidence of female academic economists being disadvantaged in internal academic promotion processes. Using data on United Kingdom academic economists, Blackaby et al. (2005) found that a gender promotion gap exists, that gender differences are apparent in outside offers, and that earnings are affected by outside offers.

Another potential reason is the 'loyal servants' model of Booth et al. (2003). This hypothesises that women are, on average, in a weaker bargaining position with their employer than men because they are more likely to have caring responsibilities – which limit their job mobility – and that this weakens the outcomes they achieve from negotiation with their employer and potentially affects promotion outcomes. Booth et al. (2003) suggested that, in addition to caring responsibilities, possible reasons that women may appear as 'loyal servants' include women being more risk averse than men if they believe there is discrimination with regard to obtaining outside job offers, and women choosing to behave less aggressively, even if it results in lower wages.

3 Data: Australian Workplace Relations Study 2014

The AWRS2014 is a linked employee–employer dataset collected between February and July 2014. The sampling frame was private sector, public sector and not-for-profit organisations with five or more employees that were covered by the *Fair Work Act 2009* (and therefore in the national jurisdiction). A stratified random sample was used. The design had 30 strata (18 Australian and New Zealand Standard Industrial Classification 2006 industry divisions) for two employment sizes (5–19 and 20+ employees). In enterprises with 20 or fewer employees, all employees were invited to participate. For enterprises with more than 20 employees, a random selection of employees were invited to participate.[4]

The AWRS2014 administered five survey instruments: four Employer Questionnaires, which collected information about the enterprise, including workplace practices, employee engagement strategies, financial performance and operation performance; and an Employee Questionnaire, which was distributed to up to 20 employees of the enterprise. In total, 3057 enterprises completed the first questionnaire component that was administered (the Employee Relations Questionnaire), 1509 employers completed all four questionnaires, and 7883 employees completed the Employee Questionnaire.

The survey included questions on actions taken by the employee in relation to their wage or salary since they began employment with their current employer. The survey asked:

> Which of the following best describes the actions you have taken in relation to your wage/salary since you commenced your employment with your employer? (multiple actions allowed):
>
> - I have successfully attained a better wage/salary for myself through a promotion
> - I have successfully attained a better wage/salary for myself through negotiating with my manager/employer (i.e. without changing roles)
> - I have attempted to attain a better wage/salary for myself in my role, but was unsuccessful (e.g. request refused or ignored)
> - I have not attempted to attain a better wage/salary for myself since I commenced employment with this employer
> - I have not attempted to get a promotion
> - Prefer not to say

The survey enables hourly wages to be calculated. However, there appear to be some coding errors in the data that produced implausibly low and high hourly wage rates. We have therefore excluded the bottom and top 5% of reported wages. This is consistent with the approach of the Fair Work Commission (2015a). The mean hourly wage rate is $39.57. The ABS publishes the average wage for nonmanagerial employees estimated from the Employee Earnings and Hours May 2014 survey. The average wage rate for nonmanagerial employees in the AWRS2014 is $37.76, compared with the ABS estimate of $35.30. The fact that the AWRS2014 estimate is slightly higher is not surprising, given that the AWRS2014 did not include workplaces with fewer than five employees.[5]

4 Negotiation over wages and promotion

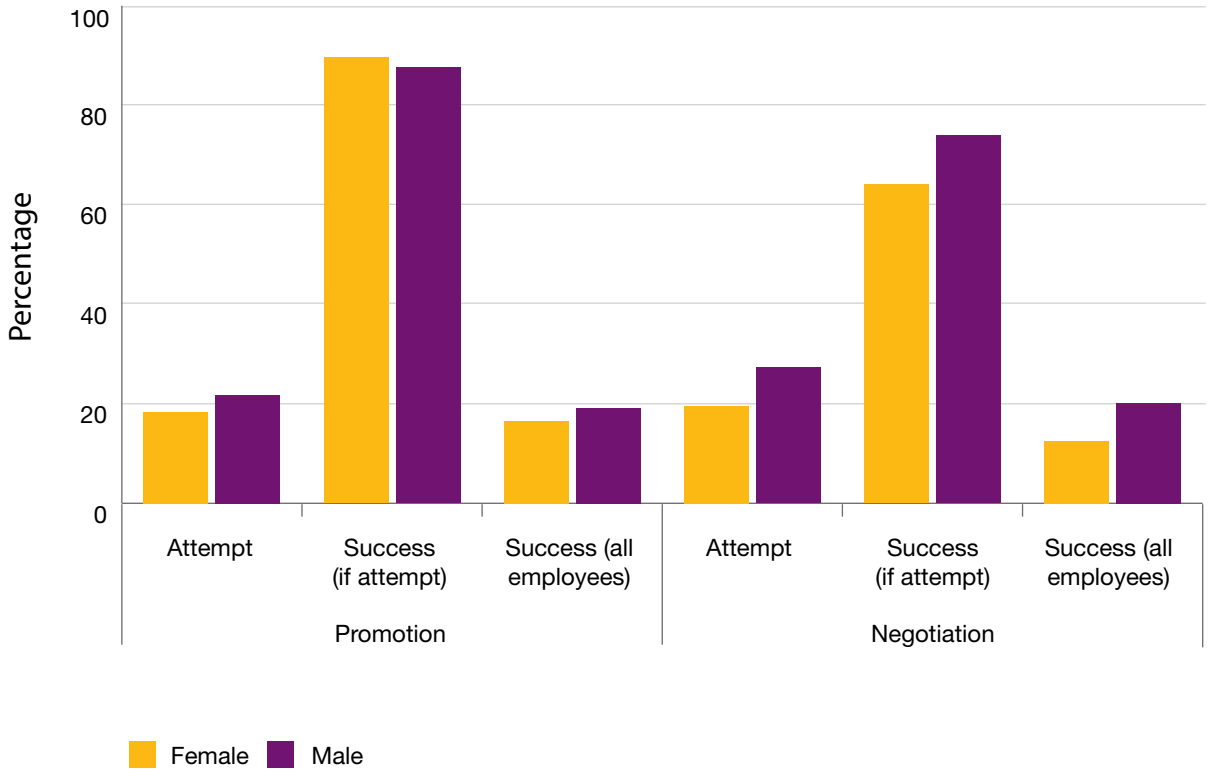
4.1 Gender differences in promotion and negotiation over wages

This section describes differences between men and women in the rates of applying for promotion to increase wages, and in negotiation over wages with managers or employers. As shown in Figure 1, there is very little difference between women and men in the proportion applying for promotion (18.4% compared with 21.8%, respectively), the success rate for those applying for promotion (89.6% compared with 87.6 %) and the proportion successfully applying for promotion (16.5% compared with 19.1%).

However, there are significant gender differences in the patterns of negotiation over wages with managers or employers. Women are substantially less likely to have attempted to negotiate (19.5% compared with 27.3%), have a lower success rate (64.1% compared with 73.9%), and therefore are less likely to have successfully negotiated their wage or salary with their manager or employer (12.5% compared with 20.2%).

Table 1 provides information on differences in hourly wages according to whether the employee had applied for promotion or whether they had attempted to negotiate their wage. As expected, those who were successful in an application for promotion had a higher average wage

Figure 1 **Applications for promotion and negotiation with manager or employer for better wages, females and males**



Note: Estimates are population weighted.

Source: AWRS2014

than those who had unsuccessfully applied for promotion. Focusing first on those who had made an unsuccessful application for promotion, men had a $5.10 per hour higher hourly wage than women, although the difference is not statistically significant, perhaps because of the relatively small numbers of employees in this group. However, among those who had successfully applied for promotion, men had a $14.20 per hour higher wage than women, which is a statistically significant difference.

Women earned an average hourly wage of $14.80 less than men when the negotiation for wages was unsuccessful. When the negotiation was successful, women earned on average $15 per hour less than men. Irrespective of whether they were unsuccessful or successful in attempting to negotiate their hourly wage with their employer or manager, the difference in wages between women and men is statistically significant.

Further, women who both successfully applied for a promotion and negotiated with their manager or employer earned on average $30.73 per hour less than their male counterparts, and this difference is statistically significant at the 1% level. Because of a very small comparison sample, the gender wage gap is statistically insignificant for those who were unsuccessful in both their promotion application and in wage negotiation with their manager or employer.

Table 1 **Average hourly wages by whether employees applied for promotion or negotiated for better wages, females and males**

	Female	Male	Difference	t-stat (difference)
Promotion				
Unsuccessful application for promotion	$39/hour	$44.10/hour	$5.10/hour	0.71
Number of observations	49	50		
Successful application for promotion	$47.50/hour	$61.70/hour	$14.20/hour	4.48**
Number of observations	404	325		
Negotiation				
Unsuccessful negotiation	$38.30/hour	$53.10/hour	$14.80/hour	3.16**
Number of observations	160	123		
Successful negotiation	$42.20/hour	$57.20/hour	$15.00/hour	5.25**
Number of observations	313	341		
Promotion and negotiation				
Unsuccessful in promotion and negotiation	$29.45/hour	$47.05/hour	$17.60/hour	1.23
Number of observations	12	13		
Successful in promotion and negotiation	$40.64/hour	$71.37/hour	$30.73/hour	3.33**
Number of observations	47	50		

** = statistically significant at the 5% confidence level
Note: Estimates are weighted.
Source: AWRS2014

4.2 Multivariate estimates of gender differences in negotiation over wages and promotion

This section estimates whether, after controlling for individual and workplace characteristics, gender differences remain in:

- attempting to negotiate wages
- success or failure in negotiation over wages
- attempting promotion
- success or failure in promotion.

Six dependent variables are modelled:

- the probability of being promoted compared with not being promoted (not having applied or having been unsuccessful)
- the probability of achieving a wage increase as a result of negotiation compared with having not negotiated or having been unsuccessful in negotiation
- the probability of unsuccessfully applying for promotion compared with having not applied for promotion or having successfully applied for promotion
- the probability of unsuccessfully having attempted to negotiate wages compared with having not attempted to negotiate or having successfully negotiated wages
- the probability of attempting promotion compared with not attempting promotion
- the probability of negotiating with a manager or employer compared with not undertaking wage negotiations with a manager or employer.

The negotiation choice is modelled as a probit regression model, and is described as:

$$\text{Prob}(y=1 \mid X, Z, FEMALE)$$

$$= \Phi\left(X\beta + Z\gamma + \left(X \times FEMALE\right)\delta_x + \left(Z \times FEMALE\right)\delta_z\right) \quad (1)$$

where $FEMALE$ represents female dummy, Φ is the normal cumulative distribution function, and X and Z contain employee and firm-specific variables, respectively. δ_x and δ_y are the coefficient vector of the interaction between female dummy and employee (X), and the corresponding coefficient vector for employer (Z). Details of the definitions of the explanatory variables are provided in Appendix A.

To facilitate interpretation of the probit estimates, average marginal effects (AMEs) are presented. For example, the AME of female on the probability of successful negotiations with a manager or employer for wage increase is computed as follows:

1. Every individual in the sample is treated as though they were male, leaving all other independent variable values as is, and then the probability that this person would have successfully negotiated a wage increase with their manager or employer is calculated.
2. The process is repeated, but in this instance the person is treated as though they were female.
3. The difference in the probabilities computed above is the marginal effect for that particular observation in the sample.
4. This process is repeated for every observation in the sample.
5. Finally, the average of marginal effects is computed, giving us the AME.

Hence, AME with respect to female represents the average (given the employee and employer characteristics of the sample under study) difference in the probability of successful negotiations with a manager or employer for wage increase between women and men.

Mathematically, the corresponding equation for AME can be written as:

$$AME \quad \Delta_{FEMALE}(y=1|X,Z)$$
$$=\frac{1}{N}\sum_{i=1}^{N}\left[\Phi\left(X_i(\beta+\delta_x)+Z_i(\gamma+\delta_z)\right)-\Phi\left(X_i\beta+Z_i\gamma\right)\right] \quad (2)$$

Results from the regression modelling that are relevant to this study are presented in Table 2, which shows the AMEs and associated z-statistics. The estimates are that there are no gender differences in the likelihood of successful promotion or unsuccessful promotion. Women, however, are 5.2% less likely than men to negotiate a wage increase successfully, but there are no differences in the probability of unsuccessful negotiation. The net effect is that women who seek to negotiate are less likely to be successful. On the whole, there is no gender difference in the likelihood of promotion application, but women on average are 6.3% less likely than men to undertake wage negotiations with their manager or employer.

Also of interest is the extent to which differences in wage-setting practice within the workplace affect the probabilities of promotion and individual-level negotiation over wages. The regression modelling suggests that there are no differences in probability of promotion and negotiation based on wage-setting practices within the workplace.

Table 2 **Average marginal effects for impact of selected variables on promotion and negotiation over wage outcomes**

	Successful promotion		Successful negotiation		Unsuccessful promotion		Unsuccessful negotiation		Promotion		Negotiation	
Highest proportion of employees have their wag set by an award	–1.90	–1.16	–1.30	–0.80	–0.70	–1.06	–0.40	–0.37	–2.40	–1.36	–1.80	–0.95
Highest proportion of employees have their wag set by an individual	–2.60	–1.42	–0.10	–0.05	–0.00	–0.01	–1.00	–0.78	–2.40	–1.24	–0.90	–0.44
Female	–0.70	–0.55	–5.20	–3.97**	–0.70	–1.28	–1.10	–1.13	–1.50	–1.05	–6.30	–4.15**

** = statistically significant at the 5% confidence level
AME = average marginal effect
Note: See Table B2 in Apendix B for further detail.

5 Estimates of impact of individual wage negotiation and promotion on hourly wage rates and the gender wage gap

5.1 Empirical specification

The impact on hourly wage rates of negotiation with an employer and applying for promotion is estimated using a standard wage equation in which the dependent variable is the natural logarithm of hourly wage (W), characteristics of the employee (X) and the firm (Z) are included as explanatory variables, and the negotiation/promotion (NEG) variables are included as a set of dummy variables with some interaction terms (equation 3):

$$\ln W_i = \alpha + X_i\beta + Z_i\gamma + NEG_i\delta + \varepsilon_i \quad (3)$$

where the subscript i represents an individual; α is an intercept term; β , γ and δ respectively are the coefficient vectors corresponding to employee, employer and negotiation-related variables; and ε_i is the residual term.

The negotiation variable vector contains the following dummy variables:

- SP is a dummy variable taking the value of 1 if an employee successfully attained a better wage or salary for themselves through a promotion; otherwise, the value is 0.
- SN is a dummy variable taking the value of 1 if an employee successfully attained a better wage or salary for themselves through negotiating with their manager or employer (i.e. without changing roles); otherwise, the value is 0.
- $(SP \times SN)$ is the interaction between the dummy variables SP and SN.
- UN is a dummy variable taking the value of 1 if an employee attempted to attain a better wage or salary for themselves by applying for a promotion, but was unsuccessful; otherwise, the value is 0.
- UP is a dummy variable taking the value of 1 if an employee attempted to attain a better wage or salary in their role, but was unsuccessful (e.g. request refused or ignored); otherwise, the value is 0.
- $(UN \times UP)$ is the interaction between the dummy variables UN and UP.

Hence, equation 3 can be rewritten as follows:

$$\ln W_i = \alpha + X_i\beta + Z_i\gamma + \delta_1 SP_i + \delta_2 SN_i + \delta_3\left(SP_i \times SN_i\right) + \delta_4 UP_i + \delta_5 UN_i + \delta_6\left(UP_i \times UN_i\right) + \varepsilon_i \quad (4)$$

5.2 Impact of attempted negotiation and promotion on hourly wages

This section presents the estimate of the impact on hourly wages of women and men of attempting to negotiate wages with a manager or employer and applying for promotion. In general, the estimates are broadly consistent with findings from other studies and are consistent with a priori expectations. The full regression results are in Appendix B.

Table 3 presents the coefficient estimates for the promotion and negotiation of wage with manager/employer-related variables. Because the dependent variable is the logarithm of hourly wages, the coefficient estimates can be interpreted as percentage point effects on wages. The estimated effects are relative to the default category (omitted category), which is that of neither having applied for promotion nor having attempted to negotiate over wages.

Successfully applying for promotion is estimated to have a positive and statistically significant association with hourly wages for both women and men. Men and women, respectively, who have successfully applied for promotion have an estimated hourly wage 10.1% and 6.6% higher than those who neither applied for promotion nor negotiated over wages with their managers or employers. The estimated hourly wage for men who have successfully negotiated their wages with their employer is 6.2% higher, but this is statistically significant only at the 10% confidence level. However, for women, there is no corresponding statistically significant effect on hourly wages.

Interestingly, for women, successfully applying for promotion and successfully attempting to negotiate wages is estimated to have a negative association of 14.6% with respect to hourly wages, and this is statistically significant at the 10% confidence level. When the direct impact of success in promotion and negotiation with employer are combined with the interaction term, for women, being successful in promotion and negotiation is associated with a reduction in hourly wages by 4.6%.

For men, there are no statistically significant effects of unsuccessful applications for promotion or negotiation over wages with managers or employers. However, for women, the result is different. On average, the estimated wages of women who were unsuccessful in attempting to negotiate were found to be 10.9% less than those of women who neither applied for promotion nor attempted to negotiate over their wage with their manager or employer. Having unsuccessfully applied for promotion is found to have no statistically significant effect on hourly wages.

These findings suggest that women who are proactive in attempting to increase their wages by negotiating and applying for promotion are punished, with this pattern of behaviour resulting in a lower hourly wage. In contrast, for men, both

Table 3 **Estimated impact of promotion and wage negotiation behaviour on hourly wage rates, females and males**

	Male		Female	
Promotion and wage negotiation behaviour	**Coefficient**	**t-stat**	**Coefficient**	**t-stat**
I have successfully attained a better wage/salary for myself through a promotion	0.101	2.460**	0.066	2.09**
I have successfully attained a better wage/salary for myself through negotiating with my manager/ employer	0.062	1.630*	0.034	0.92
Interaction – success promotion and success negotiation	0.108	0.880	–0.146	–1.800*
I have attempted to attain a better wage/salary for myself through applying for a promotion, but have been unsuccessful	–0.094	–0.980	0.073	0.750
I have attempted to attain a better wage/salary for myself in my role, but was unsuccessful (e.g. request refused or ignored)	0.024	0.390	–0.109	–2.390**
Interaction – unsuccessful promotion and unsuccessful negotiation	–0.011	–0.060	–0.160	–0.104
Wage setting within the workplace				
Highest proportion of employees have their wage set by an award	0.002	0.030	–0.038	–1.020
Highest proportion of employees have their wage set by individual arrangement	0.158	3.040**	0.078	1.710*

* = statistically significant at the 10% confidence level; ** = statistically significant at the 5% confidence level
Note: See Table B2 in Apendix B for further detail.

negotiating with their employer and applying for promotion are estimated to have a positive association with their hourly wage. This is due to the direct positive effects of promotion and negotiation, with no negative effects from attempting to use both mechanisms to increase their hourly wage.

Table 3 also provides the estimates for the variables capturing the most prevalent method of setting wages for the employer.[6] For both men and women, there is no difference in hourly wages between workplaces in which the highest proportion of employees have their wages set by an enterprise agreement and those in which the highest proportion of employees have their wages set by an award. However, in workplaces in which the highest proportions of employees have their wage set by an individual agreement, wages are higher for both women and men, but the positive effect on hourly wages is more than twice as large for men (15.8%) as for women (7.8%).

6 Discussion and conclusion

The empirical estimates presented in this paper provide support for the hypothesis that there are gender differences in informal wage negotiation between employees and their managers, and that this contributes to the lower wages received by women. Our large-scale survey-based findings are that women are less likely to attempt to negotiate over their wage with their manager or employer than men, and, if they do attempt to negotiate, they are less likely to report being successful, although part of these gender differences is explained by personal and job characteristics.

Importantly, although negotiation has a positive effect on the hourly wage received, the effect is statistically significant for men only, at the 10% confidence level. There is no gender difference in rates of application for promotion or in the success rate of applications. However, the effect of successful promotion applications on the hourly wage rate is estimated to be substantially greater for men than for women.

Consistent with the largely psychological literature (discussed in Section 2) on gender differences in bargaining, and differences in how men and women who bargain are perceived and responded to, we find that, for women, successfully applying for promotion and successfully negotiating over wages is negatively associated with hourly wages, and this negative association is greater than the direct estimated positive effects of promotion. Also, unsuccessful negotiation over wages by a female employee is estimated to have a substantial negative effect on her hourly wages. These findings do suggest that women who are proactive in applying for promotion and negotiating over their wages may be penalised in wage terms in a way in which their male counterparts are not.

The use of the more formal promotion process, while apparently producing a slightly better wage outcome for men than for women, appears to produce more equal gender outcomes with respect to hourly wages than informal negotiations. This study also finds that the predominant use of individual arrangements for setting employee wages results in significantly higher wages for men (15.8%) and women (7.8%) than in workplaces where employees predominantly have their wages set by a collective agreement made at an enterprise level between employers and employees about terms and conditions of employment.

Although this paper does not provide direct evidence on the reasons for the finding that both women who negotiate or apply for a promotion and women who are unsuccessful in negotiation received a lower hourly wage (all else being equal), the findings do raise challenges for policies and programs that aim to reduce the gender wage gap. It has been suggested that the use of more formal procedures of promotion will result in more equal gender outcomes. This is not supported by the results in this paper, because, although there are no gender differences in reported rates of success in applications for promotion, the estimates are that promotion has a larger positive impact on the hourly wage received by men than that received by women.

One possible approach to addressing the gender wage gap could be greater transparency about the pay outcomes resulting from promotion and informal negotiation. Of course, this would need to be balanced against individual workers' rights to privacy, and employers' reluctance to disclose individual pay rates that indicate variation between employees at similar levels. To the extent to which the difference is driven by unconscious biases among managers and employers, workplace interventions designed to help people identify and guard against their unconscious biases may have a role to play.

In part, what will be effective in reducing gender differences in the impact of promotion and informal negotiation over wages will be accurately identifying the behavioural mechanism generating the outcome. This is an area that requires research, particularly psychological experiments and careful qualitative research.

Appendix A Variable definitions

Variable	Definition
Disability	Dummy variable that takes a value of 1 if the employee has a chronic health condition that limits the type or amount of paid work they can do, and 0 otherwise.
Dependent children at home under 15 years	Number of dependent children at home under the age of 15.
Age	Age of employee.
Speaks English at home	Dummy variable that takes a value of 1 if the employee speaks only English at home, and 0 otherwise.
Private sector organisation	Dummy variable that takes a value of 1 if the employer is a private sector organisation, and a value of 0 if the employer is a public sector organisation or an NGO.
Nonprofit or public sector organisation (default dummy)	Dummy variable that takes a value of 1 if the employer is a public sector organisation or an NGO, and a value of 0 if the employer is a private sector organisation.
Female	Dummy variable that takes a value of 1 if the employee is a female, and 0 otherwise.
Unemployed in the past five years or past few years	Dummy variable that takes a value of 1 if the employee was unemployed in the past five years or past few years, and 0 otherwise.
Workplace size	Dummy variables that take a value of 1 if the employee works in a workplace with the number of employees indicated by the category, and 0 otherwise. Categories are 5–19 employees, 20–99 employees, 100–199 employees and 200 employees (default).
Industry dummies	A set of dummy variables that take a value of 1 if the employee works in the industry, and 0 otherwise. The omitted category is the mining industry.
Highest level education dummies	Dummy variables that take a value of 1 if the employee has a highest level of educational attainment indicated by the category, and 0 otherwise. Categories are postgraduate degree (default), graduate diploma or graduate certificate, bachelor degree, advanced diploma or diploma at certificate level, secondary school, some secondary school, and no formal education.
Occupation dummies	Dummy variables that take a value of 1 if the employee is in the occupation category indicated by the category, and 0 otherwise. Categories are manager (default), professional, white collar, and blue collar.
Employment status dummies	Dummy variables that take a value of 1 if the employee has an employment contract as indicated in the category, and 0 otherwise. Categories are permanent or ongoing basis (default), fixed term, and casual.
Employment history dummies	Dummy variables that take a value of 1 if the employee has been in paid employment for the number of years indicated by the category, and 0 otherwise. Categories are less than 1 year (default), 3 to less than 5 years, 5 to less than 10 years, 10 to less than 15 years, 15 to less than 20 years, and 20 years or more.

Variable	Definition
Method of setting wage dummies	
Highest proportion of employees have their wage set by an enterprise agreement (default dummy)	Dummy variable that takes a value of 1 if, in the workplace, the highest proportion of employees have their wage set by an enterprise agreement.
Highest proportion of employees have their wage set by an award	Dummy variable that takes a value of 1 if, in the workplace, the highest proportion of employees have their wage set by an by an award.
Highest proportion of employees have their wage set by individual arrangement	Dummy variable that takes a value of 1 if, in the workplace, the highest proportion of employees have their wage set by individual arrangement.
Negotiation/promotion dummies	
Successful promotion (SP)	Dummy variable that takes a value of 1 if the employee attained a better wage/salary through a promotion, and 0 otherwise.
Successful negotiation (SN)	Dummy variable that takes a value of 1 if the employee attained a better wage/salary through negotiating with their manager/employer, and 0 otherwise.
Interaction – successful promotion and successful negotiation ($SP \times SN$)	Dummy variable that takes a value of 1 if the employee attained a better wage/salary through a promotion and negotiating with their manager/employer, and 0 otherwise.
I have attempted to attain a better wage/salary for myself through applying for a promotion, but have been unsuccessful (UP)	Dummy variable that takes a value of 1 if the employee attempted to attain a better wage/salary through a promotion but was unsuccessful, and 0 otherwise.
I have attempted to attain a better wage/salary for myself in my role, but was unsuccessful (e.g. request refused or ignored) (UN)	Dummy variable that takes a value of 1 if the employee attempted to attain a better wage/salary through negotiating with their manager/employer, and 0 otherwise.
Interaction – unsuccessful promotion and unsuccessful negotiation ($UP \times UN$)	Dummy variable that takes a value of 1 if the employee attempted to attain a better wage/salary through a promotion and negotiating with their manager/employer but was unsuccessful, and 0 otherwise.

NGO = nongovernment organisation

Appendix B Summary statistics and regression results

Table B1 **Summary statistics**

	Female		Male		Total	
Variable	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**
Log of hourly wages	3.603	0.520	3.785	0.578	3.678	0.552
Organisation type						
Private workplaces	0.662	0.473	0.842	0.365	0.739	0.439
Nonprofit and government workplaces	0.338	0.473	0.158	0.365	0.261	0.439
Workplace size						
5–19 employees	0.304	0.460	0.297	0.457	0.301	0.459
20–99 employees	0.427	0.495	0.500	0.500	0.458	0.498
100–199 employees	0.131	0.337	0.104	0.305	0.119	0.324
More than 200 employees	0.139	0.346	0.099	0.299	0.122	0.327
Method of setting pay						
Highest proportion of employees have their wage set by enterprise agreement	0.253	0.435	0.224	0.417	0.240	0.427
Highest proportion of employees have their wage set by award	0.478	0.500	0.405	0.491	0.447	0.497
Highest proportion of employees have their wage set by individual arrangement	0.269	0.444	0.371	0.483	0.313	0.464
Employee variables						
Disability status	0.032	0.176	0.023	0.150	0.028	0.165
Dependent children under 15 years of age present at home	0.504	0.870	0.656	1.011	0.567	0.934
Age	40.022	12.731	40.671	12.675	40.311	12.711
Speak English at home	0.871	0.335	0.856	0.351	0.864	0.342
Whether unemployed in the past 5 years or past few years	0.287	0.453	0.259	0.438	0.275	0.447
Industry dummies						
Mining	0.013	0.111	0.047	0.212	0.027	0.163
Manufacturing	0.051	0.220	0.148	0.356	0.093	0.290
Electricity, gas, water and waste services	0.011	0.106	0.020	0.141	0.015	0.122
Construction	0.037	0.188	0.128	0.334	0.076	0.264
Wholesale trade	0.030	0.171	0.055	0.228	0.041	0.198
Retail trade	0.124	0.329	0.119	0.323	0.122	0.327

Table B1 (continued)

Variable	Female		Male		Total	
	Mean	SD	Mean	SD	Mean	SD
Accommodation and food services	0.082	0.274	0.074	0.261	0.078	0.268
Transport, postal and warehousing	0.045	0.207	0.063	0.242	0.053	0.223
Information media and telecommunications	0.017	0.127	0.027	0.162	0.021	0.143
Financial and insurance services	0.043	0.203	0.027	0.163	0.036	0.187
Rental, hiring and real estate services	0.019	0.137	0.010	0.098	0.015	0.121
Professional, scientific and technical services	0.075	0.264	0.073	0.259	0.074	0.262
Administrative and support services	0.045	0.208	0.030	0.170	0.039	0.193
Public administration and safety	0.033	0.179	0.035	0.185	0.034	0.181
Education and training	0.111	0.314	0.057	0.232	0.088	0.283
Health care and social assistance	0.204	0.403	0.036	0.186	0.132	0.339
Arts and recreation services	0.021	0.144	0.019	0.138	0.020	0.141
Other services	0.039	0.195	0.032	0.177	0.036	0.187
Education dummies						
Postgraduate degree	0.089	0.285	0.097	0.295	0.092	0.289
Graduate diploma and graduate certificate	0.069	0.254	0.055	0.228	0.063	0.243
Bachelor degree	0.205	0.404	0.184	0.388	0.196	0.397
Advanced diploma and diploma	0.156	0.363	0.125	0.330	0.143	0.350
Certificate level	0.236	0.425	0.273	0.446	0.252	0.434
Secondary school	0.224	0.417	0.247	0.431	0.234	0.424
Some secondary	0.009	0.092	0.008	0.088	0.008	0.091
No formal education	0.011	0.105	0.012	0.107	0.012	0.107
Occupation dummies						
Manager	0.135	0.341	0.224	0.417	0.172	0.378
Professionals	0.245	0.430	0.213	0.409	0.231	0.421
White-collar workers	0.586	0.493	0.432	0.496	0.522	0.500
Blue-collar workers	0.032	0.176	0.116	0.321	0.068	0.252
Employment status						
Permanent or ongoing basis	0.781	0.414	0.867	0.340	0.817	0.387
Fixed term	0.066	0.249	0.033	0.178	0.052	0.222
Casual	0.153	0.360	0.100	0.301	0.131	0.337

Table B1 (continued)

Variable	Female		Male		Total	
	Mean	SD	Mean	SD	Mean	SD
Employment history						
<3 years	0.039	0.195	0.034	0.183	0.038	0.190
3 to <5 years	0.048	0.214	0.065	0.247	0.055	0.229
5 to <10 years	0.157	0.363	0.129	0.336	0.144	0.352
10 to <15 years	0.172	0.378	0.173	0.379	0.173	0.379
15 to <20 years	0.153	0.360	0.134	0.341	0.144	0.352
20 years or more	0.431	0.495	0.463	0.499	0.445	0.497
Negotiation/promotion variables						
Successful promotion (SP)	0.165	0.371	0.191	0.393	0.176	0.381
Successful negotiation (SN)	0.125	0.331	0.202	0.402	0.158	0.365
Unsuccessful application for promotion (UP)	0.016	0.125	0.030	0.170	0.022	0.146
Unsuccessful negotiation (UN)	0.019	0.138	0.027	0.162	0.023	0.149
SP and SN	0.070	0.256	0.071	0.257	0.071	0.256
UP and UN	0.007	0.084	0.006	0.075	0.006	0.080

SD = standard deviation
Source: AWRS2014

Table B2 **Average marginal effects for estimates of impact of explanatory variables on promotion applications and attempted negotiation outcomes**

	Successful promotion		Successful negotiation		Unsuccessful promotion		Unsuccessful negotiation		Promotion		Negotiation	
	AME	z	AME	z	AME	z	AME	z	AME	z	AME	z
Disability	−0.060	−1.610	−0.012	−0.310	0.035	1.510	0.065	1.780	−0.009	−0.210	0.052	1.090
Dependent children under 15 years at home	−0.008	−1.120	0.001	0.140	−0.006	−1.770	−0.012	−2.270	−0.012	−1.610	−0.010	−1.270
Age	0.000	−0.070	0.001	0.150	0.002	0.740	−0.001	−0.290	0.001	0.140	−0.001	−0.250
Speaks English at home	0.010	0.530	−0.016	−0.790	−0.006	−0.730	−0.015	−1.040	0.002	0.110	−0.032	−1.370
Private sector organisation	−0.031	−1.740	0.034	2.150	−0.015	−1.660	0.009	0.790	−0.046	−2.420	0.042	2.260
Nonprofit or public sector organisation (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
5–19 employees	−0.119	−6.850	0.067	2.640	−0.010	−1.270	−0.004	−0.250	−0.132	−7.140	0.060	2.200
20–99 employees	−0.078	−4.280	0.033	1.640	−0.004	−0.560	−0.011	−0.850	−0.084	−4.340	0.020	0.880
100–199 employees	−0.053	−2.710	0.003	0.120	0.007	0.680	0.014	0.780	−0.047	−2.200	0.021	0.720
200+ employees (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
Mining	0.017	0.370	−0.038	−1.000	0.041	1.110	0.112	2.200	0.046	0.890	0.066	1.150
Manufacturing	−0.006	−0.220	0.023	0.870	0.034	1.800	−0.001	−0.060	0.017	0.590	0.023	0.770
Electricity, gas, water and waste services	−0.029	−0.650	−0.055	−1.250	0.025	0.790	0.073	1.640	−0.008	−0.160	0.021	0.360
Education and training	−0.002	−0.100	−0.058	−2.850	0.016	1.070	−0.021	−1.420	0.008	0.300	−0.076	−3.140
Construction	−0.003	−0.080	0.045	1.220	0.007	0.360	−0.030	−1.440	0.005	0.120	0.014	0.350
Wholesale trade	0.042	1.510	−0.008	−0.290	0.051	2.210	0.013	0.620	0.081	2.660	0.006	0.180
Retail trade	−0.012	−0.490	−0.019	−0.840	0.009	0.610	0.002	0.110	−0.005	−0.210	−0.015	−0.590
Accommodation and food services	0.012	0.430	−0.004	−0.130	0.040	1.920	0.025	1.190	0.045	1.460	0.026	0.800

Table B2 (continued)

	Successful promotion		Successful negotiation		Unsuccessful promotion		Unsuccessful negotiation		Promotion		Negotiation	
	AME	z	AME	z	AME	z	AME	z	AME	z	AME	z
Transport, postal and warehousing	0.051	1.640	0.009	0.300	0.011	0.620	0.017	0.800	0.066	1.980	0.028	0.830
Other services (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
Postgraduate degree	0.019	0.720	0.056	1.990	0.028	1.670	0.011	0.530	0.041	1.440	0.069	2.170
Graduate diploma and graduate certificate	0.009	0.290	0.065	2.010	0.001	0.100	0.013	0.570	0.014	0.450	0.080	2.240
Bachelor degree	0.018	0.870	0.036	1.680	0.001	0.140	0.032	1.890	0.021	0.930	0.066	2.680
Advanced diploma and diploma	0.024	1.110	0.027	1.240	−0.004	−0.480	0.001	0.080	0.023	1.010	0.029	1.180
Certificate level	0.036	1.880	-0.001	−0.080	0.011	1.330	0.036	2.550	0.049	2.440	0.035	1.680
Secondary school and below (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
Unemployed in the past 5 years or past few years	−0.081	−6.080	−0.048	−3.490	0.007	1.180	0.011	1.100	−0.074	−5.190	−0.037	−2.310
Manager	0.156	7.710	0.023	1.350	−0.014	−2.480	−0.010	−0.910	0.142	6.900	0.012	0.600
Professional	0.030	1.680	0.013	0.740	−0.009	−1.470	−0.033	−3.410	0.020	1.100	−0.021	−1.130
White collar, blue collar and others (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
Fixed term	−0.083	−3.660	0.016	0.530	−0.006	−0.650	−0.002	−0.080	−0.091	−3.740	0.012	0.360
Casual	−0.113	−6.390	−0.090	−5.130	0.014	1.190	−0.036	−3.180	−0.085	−4.010	−0.123	−6.000
Permanent or ongoing basis (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–

Table B2 (continued)

	Successful promotion		Successful negotiation		Unsuccessful promotion		Unsuccessful negotiation		Promotion		Negotiation	
	AME	z	AME	z	AME	z	AME	z	AME	z	AME	z
Less than 3 years (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
3 to <5 years	0.215	1.860	0.263	3.840	0.375	0.070	−0.012	−0.320	0.204	1.890	0.017	0.210
5 to <10 years	0.196	1.860	0.238	3.380	0.320	0.040	−0.025	−0.820	0.162	1.730	0.005	0.070
10 to <15 years	0.205	1.980	0.238	3.550	0.296	0.050	0.008	0.210	0.168	1.840	0.040	0.550
15 to <20 years	0.258	2.400	0.253	4.060	0.310	0.060	0.017	0.380	0.217	2.250	0.064	0.850
20 years or more	0.212	2.730	0.178	3.490	0.176	0.080	0.017	0.410	0.189	2.670	0.065	0.970
Highest % employees wage set by an award	−0.019	−1.160	−0.013	−0.800	−0.007	−1.060	−0.004	−0.370	−0.024	−1.360	−0.018	−0.950
Highest % employees wage set by individual arrangement	−0.026	−1.420	−0.001	−0.050	0.000	−0.010	−0.010	−0.780	−0.024	−1.240	−0.009	−0.440
Highest % employees wage set by enterprise agreement (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–
Female	−0.007	−0.550	−0.052	−3.970	−0.007	−1.280	−0.011	−1.130	−0.015	−1.050	−0.063	−4.150
Male (default dummy)	–	–	–	–	–	–	–	–	–	–	–	–

– = not applicable; AME = average marginal effect

Note: Because of lack of adequate observations in some of the variable categories for computing AME, the reference group for some groups has changed.

Table B3 **Ordinary least squares estimates of the determinants of hourly wages (logarithm of hourly wage)**

	Male		Female		Total	
Variable	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Disability	−0.089	−0.720	−0.012	−0.210	−0.033	−0.630
Dependent children under 15 years at home	0.018	1.230	−0.026	−2.190**	−0.004	−0.390
Age	0.027	2.330**	0.024	2.770**	0.022	3.310**
Age squared	0.000	−1.930*	0.000	−2.950**	0.000	−3.200**
Speaks English at home	0.071	1.540	−0.025	−0.560	0.016	0.510
Private sector organisation	−0.066	−1.130	−0.091	−2.330**	−0.084	−2.230**
Nonprofit or public sector organisation (default dummy)	–	–	–	–	–	–
5–19 employees	−0.237	−3.370**	−0.042	−0.910	−0.122	−2.720**
20–99 employees	−0.156	−2.480**	−0.035	−0.910	−0.079	−1.980**
100–199 employees	−0.084	−1.080	−0.048	−1.100	−0.054	−1.160
200+ employees (default dummy)	–	–	–	–	–	–
Mining (default dummy)	–	–	–	–	–	–
Manufacturing	−0.393	−3.110**	−0.263	−2.290**	−0.371	−3.550**
Electricity, gas, water and waste services	−0.211	−1.430	−0.103	−0.760	−0.216	−1.810*
Construction	−0.357	−2.950**	−0.283	−2.660**	−0.356	−3.570**
Wholesale trade	−0.432	−3.210**	−0.129	−1.080	−0.336	−2.980**
Retail trade	−0.581	−4.340**	−0.326	−3.100**	−0.509	−4.980**
Accommodation and food services	−0.618	−4.920**	−0.345	−3.180**	−0.533	−5.280**
Transport, postal and warehousing	−0.496	−3.680**	−0.201	−1.770*	−0.401	−3.740**
Information, media and telecommunications	−0.345	−2.260**	−0.265	−1.820*	−0.341	−2.800**
Financial and insurance services	−0.240	−1.820*	−0.091	−0.810	−0.245	−2.320**
Rental, hiring and leasing services	−0.375	−2.800**	−0.093	−0.750	−0.289	−2.590**
Professional, scientific and technical services	−0.282	−1.670*	−0.071	−0.580	−0.238	−2.060**
Administrative and support services	−0.487	−3.890**	−0.209	−1.820*	−0.412	−3.990**
Public administration and safety	−0.360	−2.480**	−0.108	−0.810	−0.277	−2.320**
Education and training	−0.411	−3.020**	−0.137	−1.180	−0.328	−3.010**
Health care and social assistance	−0.386	−2.670**	−0.246	−2.340**	−0.417	−4.230**

Table B3 (continued)

	Male		Female		Total	
Variable	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Arts and recreation services	−0.665	−5.030**	−0.416	−3.630**	−0.596	−5.660**
Other services	−0.469	−3.390**	−0.174	−1.440	−0.366	−3.280**
Postgraduate degree (default dummy)	–	–	–	–	–	–
Graduate diploma and graduate certificate	−0.194	−2.560**	−0.007	−0.120	−0.081	−1.880*
Bachelor degree	−0.105	−1.750*	−0.020	−0.410	−0.055	−1.450
Advanced diploma and diploma	−0.281	−4.300**	−0.225	−4.540**	−0.254	−6.380**
Certificate level	−0.267	−4.340**	−0.264	−5.210**	−0.266	−6.650**
Secondary school	−0.358	−5.730**	−0.215	−4.240**	−0.285	−7.150**
Some secondary	−0.312	−2.410**	−0.216	−1.350	−0.276	−2.480**
No formal education	−0.426	−2.870**	−0.321	−3.570**	−0.373	−4.650**
Unemployed in the past 5 years or past few years	−0.042	−1.260	−0.057	−2.280**	−0.052	−2.540**
Manager (default dummy)	–	–	–	–	–	–
Professional	−0.018	−0.380	−0.074	−1.760*	−0.061	−1.830*
White collar	−0.233	−6.080**	−0.232	−6.380**	−0.229	−8.840**
Blue collar	−0.379	−6.320**	−0.348	−4.530**	−0.366	−8.320**
Permanent or ongoing basis (default dummy)	–	–	–	–	–	–
Fixed term	0.089	0.980	0.121	2.300**	0.114	2.420**
Casual	0.035	0.660	0.012	0.390	0.016	0.570
Less than 3 years (default dummy)	–	–	–	–	–	–
3 to <5 years	0.112	0.750	0.040	0.360	0.078	0.880
5 to <10 years	−0.006	−0.040	0.109	1.220	0.081	1.100
10 to <15 years	0.091	0.690	0.178	1.950*	0.161	2.170**
15 to <20 years	0.113	0.860	0.182	1.870*	0.173	2.220**
20 years or more	0.094	0.680	0.186	1.900*	0.178	2.220**
Highest proportion of employees have their wage set by enterprise agreement (default dummy)	–	–	–	–	–	–
Highest proportion of employees have their wage set by award	0.002	0.030	−0.038	−1.020	−0.024	−0.750
Highest proportion of employees have their wage set by individual arrangement	0.158**	3.040	0.078	1.710*	0.118	3.210**
Successful promotion	0.101	2.460**	0.066	2.090**	0.077	3.040**

	Male		Female		Total	
Variable	Coefficient	t-stat	Coefficient	t-stat	Coefficient	t-stat
Successful negotiation	0.062	1.630	0.034	0.920	0.047	1.750*
Interaction – successful promotion and successful negotiation	0.108	0.880	–0.146	–1.800*	–0.007	–0.100
Unsuccessful promotion	–0.094	–0.980	0.073	0.750	–0.015	–0.220
Unsuccessful negotiation	0.024	0.390	–0.109	–2.390**	–0.053	–1.440
Interaction – unsuccessful promotion and unsuccessful negotiation	–0.011	–0.060	–0.160	–1.060	–0.104	–0.850
Female					–0.171	–8.410
Constant	3.873	12.080**	3.624	15.340**	3.950	20.190**
Number of observations	1336		1903		3239	
R-squared	0.285		0.227		0.259	
Adjusted R-squared	0.256		0.205		0.247	
Prob >F	0.000		0.000		0.000	

* = statistically significant at the 10% confidence level; ** = statistically significant at the 5% confidence level
Note: Standard errors are clustered by employer.
Source: AWRS2014

Notes

1. Reviews of this literature are provided by Bertrand (2011), and Croson and Gneezy (2009).

2. Austen et al. (2015) used the AWRS2014 to estimate the gender wage gap with a focus on the method of setting pay in the workplace (as reported by employees), but they did not examine the role of individual informal negotiation by the employee. Artz et al. (2016) used the AWRS2014 to study gender differences in individual negotiation over wages. They found that, once other characteristics are taken into account, there are no gender differences in the likelihood of individual informal negotiation over wages, but that women are less likely than men to have received a pay rise as a result of negotiation. Artz et al. (2016) did not examine the extent to which gender differences in individual informal negotiation over wages affects the gender wage gap.

3. In contrast, Säve-Söderbergh's (2009) use of data on Swedish social science university graduates found no gender difference in the choice of jobs that require individual wage bargaining. Her analysis of data from 1999 and 2000 surveys determined that female graduates ask for lower starting wages (about 3% lower) and are less successful in bargaining than men. She estimated that men are offered 5.3% higher wages following bargaining than a similar candidate who does not bargain, as compared with the offer for women of 2.1%.

4. Detailed description of the study design can be found in a series of AWRS technical notes available from https://www.fwc.gov.au/resources/research/australian-workplace-relations-study/awrs-technical-notes, and Fair Work Commission (2015b).

5. There is evidence that average weekly earnings increase with the number of employees (e.g. ABS 2017).

6. Austen et al. (2015) used the measure of method of pay setting as reported by employees, whereas in this paper we use the method reported by the employer.

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