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Its Correlates and Consequences

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Abstract

We use data from a nationally representative Australian household panel survey to examine the extent and nature of self-reported job discrimination, its correlates, and its associations with various employment outcomes and measures of subjective wellbeing. We find that approximately 8.5% of job applicants and 7.5% of employees report being discriminated against in the preceding two years, most commonly on the basis of their age. Gender is found to be a common factor predicting perceived discrimination in both job applications and in the course of employment, but the determinants of these two types of discrimination are otherwise somewhat different. In particular, age is a significant determinant of perceived discrimination in job applications only, while being a mother of young children is a significant factor only for discrimination in the course of employment. We also find that, holding other traits constant, ethnic and religious minorities are not significantly more likely to perceive they have been discriminated against. Little evidence of adverse effects of perceived job discrimination is found for wage levels, wage changes and the probability of promotion, but we find large negative effects on subjective outcomes such as job satisfaction

JEL classification: J70, J71, J28

Keywords: Perceived job discrimination, employment outcomes, subjective wellbeing

1. Introduction

Labour market discrimination figures prominently as an issue in public debate, but applied researchers have found it difficult to credibly measure its extent and nature. In reference to wage discrimination, a common approach has been to estimate a wage equation and interpret the ‘unexplained’ difference in earnings between two groups (such as men and women) as due to discrimination. However, as Altonji and Blank (1999) make clear, if discrimination adversely affects human capital investments and labour market participation decisions, the unexplained wage gap may understate discrimination. On the other hand, unexplained differences can arise from omitted variables related to human capital and preferences, leading to overestimation of the extent of discrimination.

One approach to overcoming omitted variables bias is to use matched employee-employer data which allow estimation of labour productivity, and thus examination of whether the relationship between productivity and wages differs across groups (Hellerstein and Neumark, 2006). However, even when detailed establishment data is available, it is frequently not possible to produce credible measures of employees’ productivity. An alternative approach, but one which can only identify discrimination in the hiring decision, has been to conduct ‘audit’ studies (Riach and Rich, 2002). Such studies test for differences in employers’ hiring decisions between two or more groups that (systematically) differ only in the characteristic under study (such as sex or race) by either sending employers fictitious resumes or paying carefully selected and trained actors to apply for positions.

A further approach is to simply ask people if they believe they have been discriminated against in employment. Such an approach allows consideration of forms of job discrimination other than wage discrimination and discrimination in hiring—including non-wage discrimination in the course of employment. Of course, perceptions of experience of discrimination may not match actual experience of discrimination, not only because a respondent may believe discrimination exists where it does not, but also because a respondent may not realise that he or she was the victim of discrimination. Indeed, it is plausible that the latter type of error is more frequent, since discrimination is typically hard for even job applicants and employees to observe, not least because employers usually have strong legal (and other) incentives to hide it. However, examination of perceived job discrimination is important even if perceptions diverge from the reality. This is because perceptions are likely to have real consequences for behaviour such as human capital investments, labour force participation and job choices. For example, a person who perceives discrimination in applying for jobs may be less likely to continue seeking employment, or may choose to become self-employed.

In this paper, we examine the prevalence and nature of perceived job discrimination, the characteristics of those who perceive they have been discriminated against, and the consequences associated with perceived discrimination. To do this, we draw on data in the Household, Income and Labour Dynamics in Australia (HILDA) Survey collected in 2008 and 2010 on respondents' perceptions of whether they believed they had been discriminated against, both in applying for jobs and in the course of employment. The HILDA Survey is a nationally representative household panel study containing information on a wide variety of characteristics and outcomes, allowing inferences on the groups in the community most susceptible to, and most affected by, perceived discrimination. Somewhat novel in this context is the ability to examine associations with measures of personality, religious belief, trust, attitudes to marriage and children and to parenting and work, and the gender mix of one's workplace and industry of employment. Moreover, we are able to consider the implications of perceived discrimination for a variety of employment and wellbeing outcomes, including wages, adequacy of hours of work, subjective assessments of likelihood of job loss, and measures of job and life satisfaction.

The plan of the paper is as follows. In Section 2 we provide a brief overview of economics research on employment discrimination, and particularly research that has examined perceived or subjective job discrimination. The data is described in Section 3, and in Section 4 we present descriptive statistics on the extent and nature of perceived job discrimination in Australia. Section 5 presents analysis of the factors associated with perceived discrimination, while Section 6 examines the employment outcomes associated with perceived discrimination. Section 7 contains concluding comments.

2. Previous literature on perceived job discrimination

Two main themes emerge from the literature investigating perceived job discrimination. The first is concerned with the correspondence, or lack thereof, between subjective assessments and objective measures of discrimination, and in particular unexplained wage gaps, and how the factors associated with discrimination differ for the two approaches to measuring discrimination (for example, Hampton and Heywood, 1993; Kuhn, 1987; Antecol and Kuhn, 2000; Antecol et al., 2011; Garcia et al., 2001; Hallock et al., 1998). Most studies find a strong association between wage gaps and perceived discrimination, but that the correlation between the two measures is far from perfect—one interpretation of which is that perceived discrimination captures additional dimensions of employment discrimination beyond those manifesting as wage gaps. There have also been studies of the factors associated with perceived discrimination without explicit reference to other measures of discrimination (for example, Banerjee, 2008; Chou and Choi, 2011; Kessler et al., 1999). Among

the varied findings of these studies is that perceived discrimination is higher among women, older employees and employees with disabilities.

The second main theme is concerned with the effects of perceived discrimination, with many focusing on health-related outcomes. For example, Pavalko et al. (2003) examine a sample of mature-age US women, finding significant adverse effects of perceived discrimination on health outcomes, while Pascoe and Richman (2009) undertake a meta-analysis of health effects of perceived discrimination, similarly concluding that it has a negative effect on both mental and physical health. Somewhat differently, Johnson and Neumark (1997) focus on employment effects of perceived discrimination among a sample of mature-age US men, finding strong evidence that perceived discrimination increases the likelihood of separation from employer, but only weak evidence of an adverse effect on employment status.

In Australia, two studies have examined perceived job discrimination, and both use the Wave 8 HILDA Survey data. Cobb-Clark (2012) focuses on gender discrimination, comparing the gender wage gap with rates of perceived discrimination of females across eight broad occupation groups, finding a positive, but weak, correlation. She interprets this as evidence that perceived discrimination is about more than simply wages. Biddle (2012) considers perceived discrimination more broadly—on the basis of gender, age, ethnicity, religion and parenting responsibilities—but similarly focuses on comparing unexplained wage gaps with perceived discrimination. In contrast to Cobb-Clark (2012), he argues there is a great deal of similarity in the factors associated with perceived discrimination and unexplained wage gaps. Neither study considers the outcomes associated with perceived discrimination, and indeed the factors associated with perceived discrimination that they consider are limited to broad occupation groups in the case of Cobb-Clark (2012) and to sex, age, immigrant and indigenous status, and gender mix of industry and of workplace in the case of Biddle (2012).

This study's contribution to the existing literature on perceived job discrimination stems from both the broad range of factors considered and the examination of a variety of objective and subjective outcomes associated with perceived discrimination. Moreover, most studies examine specific groups, such as women or racial minorities, and few consider perceived discrimination in a sample representative of the entire population of employees or job applicants. The HILDA Survey is designed to be representative of the Australian community, and the measure of perceived discrimination is relatively broad, yet it is also well-defined, asking respondents to report on job discrimination only on the basis of gender, age, ethnicity, religion or parenting responsibilities. We therefore are able to provide a more complete picture than provided by the existing literature of the extent, nature and consequences of perceived job discrimination in the population as a whole.

3. Data

The HILDA Survey is a household panel study that commenced in 2001 with a nationally representative sample of 13,969 respondents in 7,682 households. Described in more detail in Wooden and Watson (2007) and Summerfield et al. (2011), the survey is conducted annually by face-to-face interview with every household member aged 15 years and over, supplemented by a self-completion questionnaire, also administered to all household members aged 15 years and over. Information is collected annually on a wide range of topics, including labour market and education activity, income, expenditure, health and disability, subjective wellbeing and personal relationships. Information is also collected regularly, but less frequently than annually, on a variety of other topics, including wealth, retirement, health care utilisation and fertility.

In Waves 8 and 10 (2008 and 2010), a sequence of questions were included about experience of employment discrimination within the past two years. Respondents who had applied for a job in the last two years were asked:

Thinking of the jobs you have applied for in the past 2 years, do you think you were ever unsuccessful because the employer discriminated against you?

Those who responded ‘yes’ were then asked:

Do you believe you were discriminated against because of your... gender? age? ethnicity? religion? parenting responsibilities?

Respondents who had been employees at any time in the past two years were (also) asked:

Think now of all the paid jobs you have had in the past two years. Do you feel your employer in any way discriminated against you because of your... gender? age? ethnicity? religion? parenting responsibilities?

The questions about discrimination in applying for a job—but not the questions about discrimination experienced in the job—identify persons who believe they have been discriminated against for any reason. However, in all analysis in this paper, we restrict to perceived discrimination on the basis of gender, age, ethnicity, religion and parenting responsibilities. That is, we classify a person as experiencing discrimination in applying for a job only if he or she reported being discriminated against on the basis of gender, age, ethnicity, religion or parenting responsibilities.¹ This restriction means a consistent definition is applied to both discrimination in job applications

¹ The HILDA Survey data show 11.9 per cent of people who had applied for a job reported being unsuccessful because of discrimination for any reason, compared with 8.6 per cent reporting being unsuccessful for one or more of the five reasons—that is, 3.3 per cent of job applicants believed they had been discriminated against only for reasons other than their gender, age, ethnicity, religion and parenting responsibilities.

and discrimination in the course of employment. It also has the attractive feature of restricting to discrimination on the basis of characteristics that are unlikely to directly affect productivity—and therefore our discrimination measure is more likely to be consistent with economic notions of discrimination than a measure based on discrimination for any reason. Notable by its exclusion is disability or health, which, while potentially a basis for discrimination, can also impact on the ability to carry out a job. Similarly, people may believe they have been discriminated against because of a lack of qualifications, but this conception of discrimination is likewise excluded by our measure.

4. Prevalence, nature and demographic incidence of perceived job discrimination

Table 1 presents estimates of the prevalence of perceived employer discrimination over the two-year period up to the Wave 8 interviews (in 2008) and the two-year period up to the Wave 10 interviews (2010). Cross-sectional population weights provided with the unit record data (see Summerfield et al. (2011) for details) have been used to produce the estimates, which are therefore interpreted as population estimates. In the case of discrimination in applying for a job, the population is all persons aged 15 years and over who had applied for a job in the last two years. In the case of discrimination in the course of employment, the population is all persons who had been employees in the last two years.

Table 1: Prevalence of perceived job discrimination, by reason (%)

	A. Applying for a job		B. In course of employment	
	2008	2010	2008	2010
Gender	1.5	1.4	2.4	2.3
Age	6.1	6.4	4.4	4.1
Ethnicity	1.8	1.7	1.1	1.4
Religion	0.4	0.5	0.4	0.5
Parenting	1.1	1.1	1.6	1.8
Any of the above reasons	8.5	8.6	7.8	7.3
<i>Percentage of population asked question</i>	<i>28.9</i>	<i>26.0</i>	<i>63.0</i>	<i>65.0</i>

Notes: Population-weighted estimates. *Percentage of population asked question*—The percentage of the population aged 15 years and over to which the discrimination questions apply – that is, the respondent applied for a job in the last two years (Panel A) or was an employee at any stage in the last two years (Panel B). Sample size is 12,707 in 2008 and 13,445 in 2010.

The estimates indicate that, in both 2008 and 2010, approximately 8.5 per cent of people who had applied for a job in the last two years believed they had been unsuccessful because of employer discrimination on the basis of gender, age, ethnicity, religion and/or parenting responsibilities. The proportion reporting discrimination in the course of employment is slightly lower, at 7.8 per cent in 2008 and 7.3 per cent in 2010. However, the question on in-job discrimination applies to more than

twice as many people as the question on discrimination in applying for a job, which means that the total number of people reporting in-job discrimination is considerably higher than the number reporting discrimination in applying for a job.

The most common reported basis of discrimination, by a considerable margin, is age, while the least common basis is religion. Interestingly, discrimination on the basis of ethnicity and/or age is more likely to be reported by job applicants (in respect of hiring decisions) than by employees (in respect of the course of employment), whereas the reverse is true for gender and parenting responsibilities, where the prevalence rate is higher for employees in respect of the course of employment.

One might expect substantial differences in rates of reporting experience of job discrimination across different demographic groups, particularly when those groups are defined by sex, age, ethnicity, religion or parenting responsibilities. Table 2, which compares rates of perceived discrimination across demographic groups defined by these characteristics, shows this is indeed the case. Perceived discrimination (for any of the five reasons), both in applying for jobs and in the course of employment, is higher for women than men, higher for indigenous persons and immigrants (especially immigrants from non-Asian non-English speaking countries), and higher for people with a non-Christian religious affiliation. Older persons (particularly those aged 55 years and over) are also more likely to report discrimination in applying for a job, although they are no more likely to report discrimination in the course of employment than people in other age groups. Young people aged 15 to 24 have a relatively high rate of reported discrimination in employment, in contrast to their low rate of reported discrimination in applying for jobs. Also notable is that the female-male differential is much larger for discrimination in the course of employment, with the reported rate of discrimination among women nearly twice that of men.

The bottom panel of Table 2 compares rates of perceived discrimination by level of parenting responsibilities, on the assumption that this is most pertinent to women with dependent children under 12 years of age. The estimates indicate that, conditional on applying for a job or having a job, the likelihood of a woman perceiving discrimination is slightly higher if she has one or more young children. For discrimination in the course of employment, the estimates further suggest that the likelihood of perceiving discrimination is increasing in the number of young children.

Table 2: Incidence of perceived job discrimination, by demographic characteristics that could form the basis for discrimination (%)

	Applying for job	In course of employment
Sex		
Males	7.9	5.6
Females	9.1	9.6
Age group (years)		
15-24	5.3	9.2
25-34	5.8	7.7
35-44	9.0	6.0
45-54	14.5	7.3
55 and over	26.1	7.6
Ethnicity and place of birth		
Indigenous	11.6	10.4
Other Australian-born	7.5	7.4
Immigrant from main English-speaking countries	11.7	8.3
Immigrant from Asian country	11.5	6.6
Immigrant from other country	13.3	8.9
Religion		
Christian	9.3	7.0
Other religion	12.7	10.1
No religion	7.3	7.5
Parenting responsibilities		
Female, and number of children aged 0-11 is...		
...0	9.1	9.2
...1	10.1	10.0
...2 or more	8.6	11.4

Notes: Population-weighted estimates from pooled Wave 8 and Wave 10 data. Main English-speaking countries comprise Canada, Ireland, New Zealand, South Africa, UK and USA.

5. Factors associated with perceived discrimination

To investigate the factors associated with perceived employment-related discrimination, we estimate probit models of the probability a person reports experiencing discrimination on the basis of gender, age, ethnicity, religion or parenting responsibilities. Results of the models are reported in Table 3, which presents mean marginal effects estimates of both the probability of experiencing discrimination in applying for a job and the probability of experiencing discrimination in the course of employment.²

The sample for the job application discrimination model comprises all persons in Waves 8 and 10 who indicated they had applied for a job in the two years preceding interview. The model for in-job discrimination is estimated on two alternative samples. The first sample comprises all employees in Waves 8 and 10, while the second sample restricts to employees in Waves 8 and 10 who had been

² The probit model estimates the probability a binary (0-1) variable equals one as a standard normal function of a linear combination of the explanatory variables. Estimation is by maximum likelihood. The mean marginal effect of a variable is obtained by evaluating the marginal effect for each individual in the sample (holding other variables constant at actual values) and taking the mean over all sample members.

with their current employer for at least two years. The motivation for the restricted sample is that it ensures that job-related factors included in the regression model capture characteristics of the employer who actually discriminated against the employee, since respondents are asked about any discrimination experienced in the last two years—that is, in the unrestricted sample, the characteristics of the current job will, for some employees, differ from the characteristics of the job in which the perceived discrimination occurred. However, this sample restriction may introduce its own biases, particular since employees who experience discrimination may be more likely to change jobs—indeed, the HILDA Survey data show that 9.6 per cent of employees with less than two years tenure reported in-job discrimination, compared with 6.1 per cent of other employees. Hence, our preferred estimates for factors other than job characteristics come from the unrestricted sample, while our preferred estimates for job-related characteristics come from the restricted sample. Our discussion of the results correspondingly focuses on the restricted sample for job-related characteristics and the full sample for all other factors.

Factors examined for perceived experience of discrimination in applying for a job comprise sex, age, place of birth and ethnicity, religious affiliation and the importance of religion to the respondent, presence of young children (for women only), educational attainment, household income, population density and socio-economic status of the area of residence, personality traits, the extent to which the respondent trusts others, and, for women only, the extent to which the respondent has ‘traditional’ attitudes to marriage and children and to work and family. A Wave-10 dummy is also included to capture aggregate-level shifts between 2008 and 2010 in perceived discrimination.

The same factors are examined for the model of perceived discrimination in the course of employment, with the effects of various employment characteristics also considered: gender mix of the respondent’s workplace, maleness of the respondent’s industry of employment, years with current employer, part-time status, type of employment contract, hourly wage, union membership, workplace size, sector of employment, whether have supervisory responsibilities and, for immigrants from non-English speaking countries, the proportion of employees in their industry who are immigrants from these countries. For the expanded sample comprising all employees, we also include a dummy indicator equal to one if the employee had not been with the current employer for at least two years.

The above factors can be characterised as capturing one or more of: (1) traits which could be the basis for discrimination; (2) factors that affect the potential for exposure to discrimination; and (3) traits that could affect perceptions of discrimination—that is, impact on the relationship between perception and actual experience. Sex, age, ethnicity, religion and parenting responsibilities best fit

into the first category, since these are the characteristics which respondents were asked to identify as the basis for any discrimination they experienced. Educational attainment, income, location of residence and all of the employment characteristics perhaps fit best into the second category. Personality may also fit into this category, although it is also conceivable that personality traits could affect the relationship between perceptions and actual experience of discrimination. The variables for trust and attitudes fit best into the third category, and can be viewed as controls to help identify effects of (other) characteristics on the likelihood of experiencing *actual* (as distinct from perceived) discrimination. For example, the variable ‘level of trust’ can help control for differences in predilections to see the best or worst in others. People who are very trusting tend to see the ‘best’ in others and so, all else being equal, are less likely to perceive that an employer has discriminated against them; while people who are not very trusting tend to see the ‘worst’ in others, and are therefore more likely to believe that they have been the victim of discrimination. However, it should be acknowledged that, rather than being the cause of greater perceived experience of discrimination, reduced trust in others could in part be caused by past experience of discrimination.

The measure of trust we use is indeed a significant predictor of reporting experience of discrimination in both job applications and in the course of employment. The variable, which is based on the extent of agreement (on a 1 to 7 scale) with five statements about the extent to which others can be trusted, ranges in value from 5 (completely untrusting) to 35 (completely trusting). The estimates imply that an individual who is completely untrusting has on average a 0.15 higher probability of reporting discrimination in applying for a job than an individual who is completely trusting. For in-job discrimination, the corresponding increase in probability (based on the estimates from the full sample) is likewise 0.15 for both males and females. These are substantial effects when one considers that the probability of reporting discrimination over all persons is less than 0.1 for both types of discrimination.

For women, more ‘traditional’ views to marriage and children and to parenting and work might be expected to translate to a lower propensity to perceive discrimination. The estimates in Table 3 suggest this is not the case when it comes to attitudes to marriage and children, but a statistically significant effect is evident for job applications when it comes to attitudes to parenting and work.³ Compared with a woman with the most ‘progressive’ attitudes (lowest possible score of 17), a woman with the most ‘traditional’ attitudes (highest possible score of 119) has on average a 0.2 higher predicted probability of perceiving discrimination in applying for a job.

³ The variable for the extent to which traditional views are held on marriage and children is derived from the extent of agreement (on a 1 to 7 scale) with each of nine statements (e.g., *It is alright for an unmarried couple to live together even if they have no intention of marrying*). The variable for the extent to which traditional views are held on parenting and work is derived from the extent of agreement (on the same 1 to 7 scale) with each of 17 statements (e.g., *Many working mothers seem to care more about being successful at work than meeting the needs of their children*).

Table 3a: Factors associated with perceived job discrimination, 2008 and 2010—Factors applying to discrimination both in applying for jobs and in the course of employment

	Applying for job	In job	
		All employees	Employees with 2+ years tenure
Male: Level of trust	-0.005***	-0.005***	-0.004***
Female: Level of trust	-0.005***	-0.005***	-0.005***
Female: Extent to which hold traditional views on marriage & children	-0.001	0.000	0.001
Female: Extent to which hold traditional views on parenting & work	-0.002**	-0.001*	-0.000
Female	0.182***	0.085**	0.050
<i>Age in years ('15-24' omitted)</i>			
25-34	-0.000	-0.025***	-0.008
35-44	0.034***	-0.014	-0.002
45-54	0.119***	-0.004	-0.001
55 and over	0.212***	0.015	0.007
<i>Place of birth & ethnicity ('Non-indigenous Australian-born' omitted)</i>			
Aboriginal/Torres Strait Islander	0.004	0.033	0.062
Immigrant from main English-speaking countries	0.010	0.012	0.023*
Immigrant from Asian country	0.017	-0.038***	-0.035***
Immigrant from other country	0.037	-0.019	-0.005
<i>Religion ('No religion' omitted)</i>			
Christian, religion not important	0.005	-0.002	-0.001
Other religion, religion not important	-0.045**	0.019	0.018
Christian, religion important	0.013	0.004	0.003
Other religion, religion important	0.038	0.000	0.001
Female with child aged 0-4 years	0.020	0.056***	0.066***
Female with child aged 5-11 years	-0.028**	0.015	0.007
<i>Educational attainment ('Less than year 10' omitted)</i>			
Bachelor's degree or higher	-0.016	0.038**	0.043***
Diploma or Certificate III or IV	-0.013	0.022	0.025*
Year 12	-0.020	0.016	0.013
Year 10/11 or Certificate I or II	-0.014	0.005	0.022
Equivalised income ('\$0,000)	-0.011***	0.001	0.001
<i>Region ('Other region' omitted)</i>			
Major urban	0.022*	0.013	0.005
Other urban	0.016	-0.002	-0.002
Socio-Economic Indicators for Areas (SEIFA) Index decile	-0.005**	-0.001	-0.000
Personality: Extroversion	0.007	0.009***	0.006**
Personality: Agreeableness	-0.004	-0.006*	-0.005
Personality: Conscientiousness	0.002	-0.004	-0.002
Personality: Emotional stability	-0.007	-0.004	-0.005
Personality: Openness to experience	0.012**	0.013***	0.013***
Wave 10	0.016**	0.011	0.012
Sample size	4,163	8,903	6,481

Notes: Table reports mean marginal effects estimates from probit models of the probability of reporting experience of discrimination. *, ** and *** indicate statistical significance at the 10, 5 and 1 per cent levels, respectively. Main English-speaking countries comprise Canada, Ireland, New Zealand, South Africa, UK and USA. Sample means of all variables are reported in Table A1 in the Appendix.

Table 3b: Factors associated with perceived job discrimination, 2008 and 2010—Factors applying only to discrimination in the course of employment

	All employees	Employees with 2+ years tenure
<i>Gender mix of workplace ('About same' omitted)</i>		
Wave 8, Male: Majority is male	0.006	0.006
Wave 8, Male: Majority is female	0.067***	0.057**
Wave 8, Female: Majority is male	0.040**	0.031
Wave 8, Female: Majority is female	0.019*	0.021
<i>Gender mix of industry ('30-70% male' omitted)</i>		
Male: < 30% male	-0.027**	-0.019
Male: > 70% male	-0.019**	-0.021**
Female: < 30% male	-0.035***	-0.036***
Female: > 70% male	0.008	0.014
NESB & > 15% of industry NESB	0.023	0.021
Years with current employer	0.000	0.001
Part-time worker	-0.016**	-0.008
<i>Contract type ('Permanent' omitted)</i>		
Fixed term	-0.000	0.006
Casual	0.015	0.032**
Union member	0.018**	0.015**
Supervisor	0.009	0.008
<i>Workplace size ('Fewer than 20 workers' omitted)</i>		
20 to 99	0.012*	0.027***
100 or more	0.016**	0.031***
Public sector	0.014*	0.011
Hourly wage (\$)	-5.110E-4**	-4.656E-4**
Job tenure less than 2 years	0.037***	

Notes: Table reports mean marginal effects estimates from probit models of the probability of reporting experience of discrimination. *, ** and *** indicate statistical significance at the 10, 5 and 1 per cent levels, respectively. Sample means of all variables are reported in Table A1 in the Appendix.

Turning to factors for which identified effects may reflect *actual* (as opposed to simply *perceived*) discrimination, significant differences are evident across all characteristics that potentially form the basis for discrimination as measured in the HILDA Survey. A clear positive and significant effect for both types of discrimination is evident for women. Holding all else constant, being a woman increases the probability of perceiving discrimination by 0.18 in the case of job applications and by 0.085 in the case of in-job discrimination. Estimates for the age dummies imply that the likelihood of perceiving discrimination in applying for a job is monotonically increasing in age from the age of 25. Perceived in-job discrimination is significantly lower for employees aged 25 to 34 years, holding all else constant, but does not otherwise significantly differ by age.

Somewhat surprisingly, no significant association between perceived discrimination in applying for jobs and place of birth and ethnicity is evident, while—even more surprising—*negative* effects on the probability of perceiving in-job discrimination are found for being an immigrant from an Asian country. This contrasts with Biddle's (2012) finding that Indigenous Australians are significantly more likely to report discrimination in job applications and in the course of employment. Biddle (2012) also finds that recent immigrants are significantly more likely to report discrimination in applying for jobs (but not in the course of employment). The difference in findings with respect to

Indigenous Australians is probably attributable to the broader range of controls included in our models, while the difference with respect to immigrants is attributable to Biddle's focus on recent immigrants, whereas we examine all immigrants and distinguish between three categories for country of origin.

Estimates for the variables for religious affiliation and the importance of religion similarly suggest no adverse effects associated with minority status in this respect. Four dummy variables are included in the models for religious belief, distinguishing five categories: no religion; Christian religion, and religion is important in one's life (defined as a score of 7 or more on a 0-10 scale, where 0 corresponds to 'one of the least important things in my life' and 10 corresponded to 'the most important thing in my life'); others with a Christian religious affiliation; non-Christian religious affiliation, and religion is important in one's life; and others with a non-Christian religious affiliation. No significant effects of religious belief are found for discrimination in the course of employment, while for discrimination in applying for jobs, having a non-Christian religious affiliation, but not regarding religion as important in one's life, is actually associated with a *lower* likelihood of perceiving discrimination.

Effects associated with parenting responsibilities, which we restrict to women with young children, indicate a sharp distinction between applying for jobs and in-job discrimination. Women with children under the age of five are more likely to perceive discrimination in the course of employment, but not in applying for jobs. This difference may be related to the fact that employers will often not know whether a female job applicant has children, and so therefore are unable to discriminate on this basis when someone is applying for a job. Once a woman is employed, it will typically become apparent that she has young children, and indeed, it may be for reasons such as failure to (satisfactorily) accommodate requests for time off to attend to sick children that the employee believes she has been discriminated against. Mothers of children aged 5-11 years, on the other hand, are no more likely than women without young children to perceive discrimination in the course of employment. They are, moreover, significantly less likely to perceive discrimination in applying for jobs than women without young children. This perhaps reflects the types of jobs they tend to apply for—in particular, part-time jobs.

Educational attainment, household income and location of residence are characteristics that cannot be the basis for job discrimination as defined in our study, but could conceivably affect exposure to discrimination. For example, employer attitudes may differ across regions, and educational attainment, and perhaps household income, will impact on the types of jobs individuals apply for and work in. For educational attainment, the only significant estimate is for perceived in-job discrimination of people with university qualifications, and here the effect is *positive*—that is,

university educated employees are more likely to perceive discrimination. This is the opposite of what one would probably expect if educational attainment captures exposure to discrimination; it may therefore be that this reflects greater sensitivity to, or awareness of, discrimination rather than greater exposure to discrimination.

The income variable included in the regression equations is household disposable income 'equivalised' using the modified OECD scale (Hagenaars et al., 1994). No association between income and in-job discrimination is evident, but a significant negative association is found for discrimination in applying for jobs, each additional \$10,000 of equivalised income on average reducing the probability of perceiving discrimination by 0.011. Of course, this association may in fact be an effect of discrimination, via lower household earnings due to discrimination, rather than a predictor or cause of discrimination.

We examine two characteristics of location of residence: population density and socio-economic status. The variables for population density comprise dummies distinguishing three categories of population density: major urban areas (population centres of 100,000 people or more), other urban areas (population centres of between 1,000 and 99,999) and other areas. Socio-economic status is captured by the local area's decile of the 'Socio-Economic Indicators for Areas' (SEIFA) Index of Relative Socio-Economic Advantage/Disadvantage.⁴ Living in a major urban area and living in a low socio-economic status region are both associated with significant positive effects on perceived discrimination in applying for a job, but population density and socio-economic status of a region have no discernible effects on perceived in-job discrimination. The finding for socio-economic status with respect to applying for jobs is consistent with discriminatory attitudes being more prevalent in more disadvantaged regions. That major urban areas are associated with greater propensity to perceive discrimination when applying for jobs may reflect greater diversity in larger population centres creating more potential for discrimination, although it could also be that residents in major urban areas are more prone to perceiving discrimination.

The personality measures included in the models come from a multi-item question included in Wave 9 which was designed to provide measures of the 'big five' personality traits — extroversion, agreeableness, conscientiousness, emotional stability and openness. The approach used to measure these traits is closely based on that used by Saucier (1994), and is described in more detail in Summerfield et al. (2011). For in-job discrimination, statistically significant effects are evident for two of the five traits, with extroversion and openness to experience positively associated with

⁴ The SEIFA index, derived from the 2006 Census by the Australian Bureau of Statistics (ABS), is measured at the Census Collection District level (approximately 250 households) and takes into account variables such as the proportions of families with high incomes, people with a tertiary education, and people employed in a skilled occupation. See ABS (2008) for more information.

perceptions of discrimination. Extroversion and openness to experience may make an individual more likely to take jobs prone to discrimination, although it is also possible that these traits themselves render an individual more susceptible to discrimination (in any job). For discrimination in applying for jobs, only for openness to experience is a significant effect evident, with the estimated effect similar to that found with respect to in-job discrimination.

The model of the determinants of discrimination in the course of employment considers additional employment-related factors that are only available for people employed at the time of interview. Two sets of variables are included that are potentially relevant to perceived discrimination on the basis of gender: the gender mix of the workplace of the employee, and the gender mix of the employee's industry of employment. The variables for the gender mix of the workplace are derived from respondents' assessments, with three categories distinguished: 'majority male', 'majority female', and 'about the same number of men and women'.⁵ The variables for the gender mix of the industry are derived from the HILDA Survey data and are based on the proportion of employees in the respondent's Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 one-digit industry that are male. Similar to the gender mix of the workplace, three categories are distinguished: less than 30 per cent male, 30-70 per cent male, and more than 70 per cent male.

Strikingly, men are more likely to perceive they have been victims of discrimination if the majority of people at their workplace are female, whereas there is no significant effect of the workplace gender mix for women. Note, however, that in the full sample women are in fact more likely to perceive they have been victims of discrimination if the majority of people at their workplace are male. It therefore seems likely that the absence of a significant effect of workplace gender mix in the restricted sample reflects greater propensity for women experiencing discrimination in such workplaces to change jobs.

Effects associated with the gender mix of the industry are somewhat different, and are more symmetrical across men and women: women are less likely to perceive discrimination if the male share of employment in the industry is less than 30 per cent, while men are less likely to perceive discrimination if the *female* share of employment in the industry is less than 30 per cent (that is, more than 70 per cent of employees in the industry are male). Thus, both men and women are less likely to perceive discrimination if the industry is dominated by their own sex, but—compared with a more balanced gender mix—they are not more likely to perceive discrimination if the industry is dominated by the opposite sex.

⁵ Gender mix of the workplace was only obtained from respondents in Wave 8. The workplace gender mix dummy variables are therefore all set to zero for all respondents in Wave 10.

Following the same approach as for the gender mix of industry, a dummy indicator is included equal to one if the respondent is an immigrant from a non-English speaking country and is employed in an industry in which more than 15 per cent of employees are immigrants from non-English speaking countries, included on the basis that the respondent will be less likely to experience discrimination. However, given that, all else being equal, immigrants from non-English speaking countries are not more likely to report experiencing discrimination in their current job, it is unsurprising that no significant effect of this variable is found.

For the remaining employment characteristics included in the model, a priori expectations about associations with perceived job discrimination are more ambiguous. The estimates indicate that casual employees are more likely to perceive discrimination, with an average increase in the probability of reporting discrimination in employment of 0.032. Being a member of a trade union is also associated with an increased probability of reporting discrimination. However, as with the finding for university-educated employees, this may reflect greater awareness of discrimination rather than greater actual experience of discrimination. As mentioned, under-reporting could occur because of the inherent difficulty in observing discrimination, which may be less of an issue for union members. The estimates also imply that employment at a small workplace (fewer than 20 workers) is associated with a lower likelihood of perceiving discrimination.

With respect to wages, the table shows that the higher the employee's hourly wage, the less likely he or she is to report discrimination in employment, although the effect is quantitatively small, with a ten dollar increase on average reducing the probability of reporting discrimination by 0.005. Moreover, whether this statistical association represents a cause or consequence of discrimination is unclear—that is, the observed association could be because higher-wage employees are less prone to experiencing discrimination, or because experiencing discrimination causes lower wages. Finally, the estimate for the dummy indicator for job tenure less than two years, included in the full sample model, shows that, holding other characteristics constant, shorter-tenure employees are indeed more likely to report experience of in-job discrimination.

6. Outcomes associated with perceived in-job discrimination

A reasonable premise is that job-related discrimination has adverse consequences, at least for the victims of discrimination. However, the extent and nature of these effects is uncertain, particularly in light of the imperfect relationship between perceived discrimination and unexplained wage gaps (as established by Cobb-Clark (2012) and Biddle (2012) in the case of Australia).

We consider associations between perceived discrimination in the course of employment and a variety of outcomes potentially affected by job-related discrimination. These outcomes comprise

wages, promotion, underemployment, overemployment, job satisfaction, subjective probability of job loss and job leaving, and overall life satisfaction. Four wage outcomes are considered: current log hourly wage; current log weekly wage; two-year change in log hourly wage; and two-year change in log weekly wage. The promotion outcome is a binary variable equal to one if the employee has been promoted within the last two years, and zero otherwise. Underemployment is equal to the excess of preferred weekly hours of work over actual usual weekly hours of work (and is equal to zero if preferred hours are less than usual hours). Overemployment is equal to the excess of usual hours over preferred hours (and is equal to zero if preferred hours exceed usual hours).

For job satisfaction, we examine overall job satisfaction and satisfaction with five aspects of the job: pay; job security; the work itself; working hours; and job flexibility. All of these variables range from 0 (completely dissatisfied) to 10 (completely satisfied). The variable for subjective probability of job loss is the employee's assessment of the 'per cent chance that you will lose your job in the next 12 months (that is, get retrenched or fired or not have your contract renewed).' The variable for the subjective probability of leaving the current job is similarly the employee's assessment of 'the per cent chance that you will leave your job voluntarily (that is, quit or retire) during the next 12 months.' The life satisfaction variable comes from responses to the question 'All things considered, how satisfied are you with your life?' and is measured on the same 0 to 10 scale as job satisfaction.

For each outcome, we estimate a regression model containing the outcome as the dependent variable and including a dummy indicator equal to one if the individual reported experiencing discrimination in the course of employment within the last two years. A probit model is estimated for the promotion outcome, while for all other outcomes OLS regression models are estimated. Each model is estimated on pooled Wave 8 and Wave 10 data and contains controls for educational attainment, work experience, location of residence, personality, 'trust', 'traditional' attitudes to work and family, industry, employment contract type, part-time/full-time status and wave. The variables for educational attainment, location of residence, personality, trust and attitudes to work and family are the same as included in the Table 3 regressions. Years of work experience is captured by five dummies: less than 5, 5 to less than 10, 10 to less than 20, 20 to less than 30, and 30 or more. The industry variables comprise 17 dummies distinguishing each one-digit Australia and New Zealand Standard Industrial Codes 2006 industry (ABS, 2007), and the employment contract variables comprise dummies that distinguish 'permanent', 'fixed-term' and 'casual' employment.

We also estimate models that add controls for sex, age, place of birth and ethnicity, religion and, for females, parenting responsibilities. These are the characteristics that could be the basis for

discrimination. Inclusion of these controls will therefore potentially capture some of the effects of (perceived) discrimination, implying that in the models that include them we can interpret estimates for the ‘discrimination’ dummy as effects beyond those captured by the characteristics themselves.

As with the examination of the factors associated with discrimination in the course of employment, the models are estimated on two samples: all employees; and employees who have been with the current employer for at least two years. The full sample has the advantage of capturing outcomes for all current employees who have experienced in-job discrimination in the last two years. The restricted sample has the advantage, for employment-related outcomes, that the outcomes relate to the job in which discrimination is experienced, which will not always be the case in the full sample. One might expect that job-related outcomes will be worse for those still with the discriminating employer. However, given that some fraction of those with less than two years tenure will still be employed in the job in which the discrimination occurred, and that adverse effects of discrimination might include ‘pushing’ employees into less desirable jobs, differences in effects between the full and restricted samples are *ex ante* uncertain.

Table 4 presents the coefficient estimates for the discrimination dummy variable. The objective outcome measures—wages, wage changes and promotion—suggest there are few adverse effects of perceived discrimination. Indeed, the only statistically significant adverse effect evident is for hourly wages, and this is only for the full sample when discrimination traits are excluded. The only other significant effects are for the two-year change in hourly wages for the restricted sample, and here the estimates are in the opposite direction to that predicted, with those perceiving they have been the victim of discrimination experiencing hourly wage growth 5.6 per cent higher than observationally similar employees who do not perceive they have suffered discrimination.

In contrast to the objective measures, almost all subjective measures exhibit large and statistically significant negative associations with perceived job discrimination. Holding constant the controls, underemployment is higher among employees reporting discrimination—although estimates are not statistically significant in the restricted sample (which possibly suggests some of those who have changed jobs in the last two years having been ‘pushed’ into jobs with inadequate hours). Overemployment is also higher among employees reporting discrimination, while all measures of job satisfaction are lower, self-assessed probabilities of job loss and job leaving are higher, and overall life satisfaction is lower. Consistent with the full sample containing employees no longer working for the discriminating employer, the estimated adverse effects are somewhat smaller in the full sample than in the restricted sample.

Table 4: Outcomes associated with perceived discrimination in the course of employment

	(A) All employees		(B) Employees with 2+ years tenure	
	Excluding discrimination traits	Including discrimination traits	Excluding discrimination traits	Including discrimination traits
Log hourly wage (December 2010 prices)	-0.038**	-0.022	-0.026	-0.014
Log weekly wage (December 2010 prices)	-0.031	-0.001	-0.024	0.003
Two-year change in log hourly wage	0.022	0.025	0.051**	0.056**
Two-year change in log weekly wage	-0.000	-0.011	0.011	0.017
Promoted in last two years	0.013	0.018	0.020	0.022
Extent of underemployment	0.591***	0.742***	0.124	0.267
Extent of overemployment	0.703**	0.451	1.071***	0.761**
Satisfaction (0-10 scale) with ...				
...pay	-0.653***	-0.657***	-0.713***	-0.717***
...job security	-0.733***	-0.734***	-0.788***	-0.792***
...work itself	-0.539***	-0.537***	-0.614***	-0.591***
...working hours	-0.566***	-0.560***	-0.672***	-0.650***
...job flexibility	-0.884***	-0.857***	-1.058***	-1.021***
...job overall	-0.732***	-0.738***	-0.938***	-0.925***
Per cent chance of ... in next 12 months?				
leaving job voluntarily	6.394***	6.472***	9.509***	9.647***
losing job involuntarily	2.792***	2.906***	5.045***	5.076***
Life satisfaction (0-10 scale)	-0.239***	-0.227***	-0.278***	-0.258***
Sample size	8,903		6,481	

Notes: For all outcome variables except ‘Promoted in the last two years’, the table presents OLS coefficient estimates on a dummy indicator equal to one if the sample member reported experiencing discrimination by their employer within the last two years. For the promotion outcome, the ‘mean marginal effect’ estimate from a probit model is reported. All regressions contains controls for educational attainment, work experience, location of residence, personality, ‘trust’, ‘traditional’ attitudes to work and family, industry, employment contract type, part-time/full-time status and wave. Discrimination traits are those that potentially form the basis of discrimination, comprising variables for sex, age, ethnicity and place of birth, religious belief and parenting responsibilities. *, ** and *** indicate statistical significance at the 10, 5 and 1 per cent levels, respectively. Sample means of all variables are reported in Table A1 in the Appendix.

The results presented in Table 4 therefore indicate that the discrimination perceived by employees primarily relates to job aspects other than wages or objective measures of career progression, as measured by wage changes and promotion. Alternatively, and perhaps more likely, it may be that employees who have ‘bad’ jobs, or bad employment situations more generally (associated with which will be low job satisfaction and even low life satisfaction), are more prone to reporting discrimination. Likely also playing a role is that employees with a negative ‘disposition’ may be more likely to report both discrimination and negative sentiments in respect of the subjectively measured outcomes, and this negative disposition is not captured by the variables for personality and trust included in the model. This is particularly likely for the subjective outcomes relating specifically to employment, since personality traits and trust to not specifically relate to the employment domain of people’s lives.

7. Conclusion

This study has provided new evidence on the prevalence and nature of perceived job discrimination in Australia, the personal and job characteristics associated with perceived job discrimination, and the outcomes associated with perceived job discrimination. We find that job discrimination on the basis of gender, age, ethnicity, religion or parenting responsibilities is, at least as perceived by potential victims of discrimination, a significant feature of the Australian labour market. By far the most common reason cited for discrimination is age, although significant numbers, mostly women, believe they have been discriminated against in the course of employment because of their gender.

While gender is a common factor predicting perceived discrimination in both job applications and in the course of employment, the determinants of the two types of discrimination are otherwise somewhat different. Particularly notable in this regard is that age is a significant determinant of perceived discrimination in applying for jobs, but not in the course of employment. The opposite pattern is evident for women with young children (aged 0-4 years), who have a higher probability of reporting discrimination in the job, but not in applying for jobs. This is perhaps not unexpected given that prospective employers will often not know whether a female job applicant has children, whereas post-hiring parental circumstances will typically become apparent.

A further important finding from the models of the determinants of perceived discrimination is that ethnic and religious minorities are not significantly more likely to perceive they have been discriminated against than other groups in the community (holding other traits constant). Certainly, the finding with respect to ethnic minorities runs counter to the findings of Kessler et al. (1999) for the US and Banerjee (2008) for Canada. Indeed, the finding is contrary to Biddle's (2012) finding, based on Wave 8 of the HILDA Survey data, of significantly higher perceived discrimination among recent immigrants and indigenous persons in Australia. While we have not attempted to investigate the reasons for the difference, the likely explanation is that we employ a broader range of controls than Biddle; further, with respect to immigrants, Biddle focuses on recent immigrants, whereas we examine all immigrants (but distinguish by country of origin). For discrimination in the course of employment, we also find significant differences across several job characteristics, including the gender mix of the workplace, the gender mix of the industry, the type of employment contract, workplace size and the hourly wage.

Little evidence of adverse effects of perceived job discrimination is found for objective employment outcome measures, in the form of wage levels, wage changes and promotion probabilities. In contrast, large negative effects on subjective outcomes are evident. However, given that the estimated models identify statistical associations rather than causal effects of perceived discrimination, these negative effects have several possible interpretations, including that perceived

discrimination may, at least to some extent, reflect poor job quality rather than discrimination per se. Nonetheless, the estimates are prima facie evidence of adverse effects of perceived discrimination, and suggest this is worthy of further investigation.

8. Appendix

Table A1: Sample means of regression variables

	Model for discrimination in applying for job	In-job discrimination models	
		All employees	Employees with 2+ years tenure
Report discrimination	0.091	0.070	0.058
Male: Level of trust	10.51	11.44	11.79
Female: Level of trust	13.02	12.90	12.79
Female: Extent to which hold traditional views on marriage & children	18.42	17.91	17.72
Female: Extent to which hold traditional views on parenting & work	30.58	29.13	28.54
Female	0.549	0.521	0.509
15-24	0.314	0.171	0.102
25-34	0.217	0.191	0.179
35-44	0.210	0.235	0.249
45-54	0.183	0.255	0.289
55 and over	0.076	0.148	0.180
Non-indigenous Australian-born	0.813	0.813	0.804
Aboriginal/Torres Strait Islander	0.028	0.016	0.012
Immigrant from Eng. speaking country	0.075	0.087	0.095
Immigrant from Asian country	0.041	0.039	0.040
Immigrant from other country	0.044	0.044	0.048
No religion	0.390	0.342	0.320
Christian, religion not important	0.390	0.432	0.451
Other religion, religion not important	0.026	0.023	0.023
Christian, religion important	0.173	0.185	0.188
Other religion, religion important	0.026	0.018	0.019
Female with child aged 0-4 years	0.071	0.066	0.065
Female with child aged 5-11 years	0.103	0.102	0.101
Less than year 10	0.024	0.025	0.026
Bachelor's degree or higher	0.272	0.302	0.323
Diploma or Certificate III or IV	0.268	0.310	0.323
Year 12	0.249	0.192	0.164
Year 10/11 or Certificate I or II	0.186	0.172	0.165
Equivalised income (‘\$0,000)	4.594	5.217	5.427
Other region	0.126	0.139	0.141
Major urban	0.640	0.637	0.636
Other urban	0.234	0.224	0.223
Socio-Economic Indicators for Areas (SEIFA)			
Index decile	5.77	5.90	5.95
Personality: Extroversion	4.48	4.43	4.40
Personality: Agreeableness	5.33	5.36	5.37
Personality: Conscientiousness	4.97	5.13	5.19
Personality: Emotional stability	5.04	5.19	5.25
Personality: Openness to experience	4.33	4.19	4.16
Wave 10	0.469	0.508	0.527

Table A1 continued: Sample means of regression variables

	In-job discrimination models	
	All employees	Employees with 2+ years tenure
Wave 8, gender mix about same	0.323	0.328
Wave 8, Male: Majority is male	0.142	0.140
Wave 8, Male: Majority is female	0.033	0.033
Wave 8, Female: Majority is male	0.039	0.034
Wave 8, Female: Majority is female	0.142	0.137
30-70% male	0.239	0.225
Male: < 30% male	0.060	0.068
Male: > 70% male	0.191	0.192
Female: < 30% male	0.222	0.244
Female: > 70% male	0.049	0.046
NESB & > 15% of industry NESB	0.034	0.033
Years with current employer	6.98	9.37
Part-time worker	0.320	0.294
Permanent	0.708	0.775
Fixed term	0.096	0.087
Casual	0.196	0.138
Union member	0.261	0.315
Supervisor	0.485	0.546
Fewer than 20 workers	0.337	0.299
20 to 99	0.311	0.319
100 or more	0.352	0.382
Public sector	0.293	0.336
Hourly wage (\$)	29.53	31.35
Job tenure less than 2 years	0.272	0.000
Log hourly wage (December 2010 prices)	3.257	3.322
Log weekly wage (December 2010 prices)	6.665	6.762
Two-year change in log hourly wage	0.081	0.072
Two-year change in log weekly wage	0.177	0.139
Promoted in last two years	0.172	0.179
Extent of underemployment	1.39	1.10
Extent of overemployment	3.18	3.52
Satisfaction (0-10 scale) with ...		
...pay	7.13	7.19
...job security	8.12	8.24
...work itself	7.58	7.62
...working hours	7.31	7.31
...job flexibility	7.46	7.44
...job overall	7.66	7.69
Per cent chance of ... in next 12 months?		
leaving job voluntarily	22.4	19.1
losing job involuntarily	8.8	7.7
Life satisfaction (0-10 scale)	7.89	7.91

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