To what extent discriminatory attitudes towards older workers at work affect retirement intentions of men and women?*

Revision March 2011

Abstract

Purposes

The paper aims to investigate whether employers attitudes towards older workers, especially regarding promotions, affect really their retirement intentions, distinguishing men and women.

Empirical methodology

First, I use the wave 1992 of the Health and Retirement Study to estimate, through a Fields decomposition, the relative contribution of the feeling of an older worker to be discriminated regarding promotions, to explain the self-reported probability to work full time after 62, decomposing by gender. Second, using the two first waves of HRS, I remove any bias due to time-constant unobserved heterogeneity, to test whether the individual feeling to be passed over for promotion may be misreported, owing to a strong preference for leisure. At last, I examine the effect of a change in this variable over time on the intentions to exit early.

Main findings

The Fields decomposition shows that feeling passed over for promotion plays a non negligible role to predict retirement plans but only for women. In addition, using panel data allows to exhibit a misreporting bias that may lead to underestimate the negative effect of discriminatory practices towards older workers on their retirement plans. Lastly, an increase between 1992 and 1994 in the age-discrimination towards older workers encouraged women to leave their job early while it had no effect on retirement plans of men.

Research implications

Empirical results put forward the idea that retirement intentions may differ across gender, owing to the different nature of the relation employer-employee. While for men, this relation is characterized by delayed-payment arrangements signed ex ante with the employer, as already shown by Adams (2002), it is not true for women. Consequently, the age-based preference of employers for promotion, leading to a lower probability of promotion for older workers, is treated by men as a consequence of ex ante arrangements and does not affect their retirement plans. However, women can attribute such attitudes of their employer to a kind of blatant discrimination, reducing therefore their attachment to their job.

Originality

A longitudinal approach of the determinants of retirement intentions, that allows to remove the unobserved heterogeneity constant over time and to estimate to what extent the feeling to be passed over for promotion may be attributed, for each gender, to some arrangements signed ex ante with the employer

Keywords: Retirement intentions, age discrimination, longitudinal data, delayed-payment contracts

JEL Classification: J14 J26 C23

*I would like to thank Sebastien Roux and other seminar participants at the annual Congress of the European Association of Labour Economists (Tallinn) for their very helpful comments and suggestions. I am also grateful to anonymous referees. Any remaining errors are mine.

1 Introduction

Effective retirement ages had fallen significantly over the last 30 years in most OECD countries, especially for women, whose exit age declines from 66,3 in 1977 to 62,9 in 2002. While this trend has reversed in some OECD countries since 2000, effective exit ages are still lower than official retirement ages. Low older worker employment rates are a matter of concern in a setting of an aging population. This pattern may lead to fiscal sustainability problems, especially for countries with a Pay-As-You Go pension scheme, in which pensions of retired individuals are financed through contributions of workers. Consequently, maintaining older workers in the labour force has become a key policy concern for most OECD countries. In this setting, it is crucial to better grasp the causes that lead individuals to retire early.

Rather than examining the causes of retirement transitions, a large bulk of literature investigated closely the determinants of retirement intentions. Understanding what drives retirement plans of individuals is important for many reasons. First, retirement intentions may affect not only the effective exit age of a worker but also her actual productivity at work. As stressed by some recent studies (Hanisch and Hulin, 1991; Adams and Beehr, 1998; Henkens and Leenders, 2010), early retirement intentions may imply a psychological withdrawal of an older worker from her job and therefore a strong fall in her productivity, long before he effectively leaves her activity. So it is in the interest of the managers to examine what makes some older workers "mentally retired" to avoid a strong decline in their productivity when they approach retirement age.

In addition, studying retirement intentions rather than effective retirement age allows to account for the role of work-related variables, that are unobservable once the individual is effectively retired. In an influential paper, Beehr (1986) established a comprehensive model that incorporated three families of factors of retirement intentions: personal factors refer to health status and financial situation, psychological factors are related to non-work factors as the social aspects of retirement and job and organizational factors correspond to the work environment of the individual. In a more recent contribution, Wang et al. (2009) grouped the predictors of retirement decision into two categories: microlevel personal factors and mesolevel work-related factors. Attempting to identify which specific aspects of the work environment may affect retirement plans, many empirical studies have shown that retirement decisions are influenced by organizational commitment (Taylor and Shore, 1995), career prospects and the quality of social relationships at work (Kosloski et al., 2001; Adams, 1999), autonomy and effort-reward imbalance (Siegrist et al., 2006), or being tired of working (Beehr et al., 2000).

However, less attention has been paid to the effect of some negative employer's discriminatory attitudes towards against older workers on their retirement intentions. Adams (2002) filled partially this gap focussing on age-based promotion preferences and testing three main causes that may lead older workers to report that they feel passed over for promotion in their firm. First, promoting merely young workers may be due to blatant age-discrimination, encouraging therefore older workers to leave the workforce early. Second, workers unhappy with their job may attribute their misfortune to age-discriminating practices of their employer, whether this is the case or not. Adams (2002) referred to this misreporting bias as "the disgruntled worker effect". Finally, the lower probability of older workers to be promoted may stem from delayed-payment contracts, aimed to discourage shirking (Lazear, 1979), implying increasing wages with tenure and leading to a reward phase, in which the wage received by a worker exceeds her marginal productivity. Consequently, the probability of an older worker to be promoted will fall as she enters in this reward phase. Using cross-sectional data drawn from the first wave of the Health and Retirement Study, Adams (2002) investigated whether older workers who report that their firms favor young workers in promotion decisions expect to exit earlier. He highlighted a negative and significant effect on their self-reported probability to work full-time after 62, that falls nearly to zero when he included variables related to the presence of implicit delayed-payment contracts. He concluded that much of this effect is due to an high correlation between promotions and delayed payments.

The implications of his work are quite strong because it leaves no room for public policy to limit age discrimination regarding promotions, given that discriminatory practices may be explained by a firm effort to elicit better performance through delayed payments arrangements. However, some recent papers have shown that negative treatment of older workers may result from some stereotypes held by their employers (Taylor and Walker, 1998; Loretto and White, 2006), supporting evidence of blatant discrimination. As maintaining older workers in the labour force has become a huge challenge for policy makers, it appears to be crucial to examine more precisely to what extent discriminatory attitudes of employers towards older workers regarding promotions may affect their retirement intentions and also to what extent these attitudes may be explained by implicit contracts to induce better performance.

This paper is an extension of the paper of Adams (2002) in several aspects. First, in contrast to his study, I also include women in my sample. Even though gender differences in determinants of retirement intentions have been widely studied (Talaga and Beehr, 1995; Gradman, 1994; Pienta and Hayward, 2002; Dahl et al., 2003), no paper showed that the influence of the discriminatory practices of employers on retirement intentions may also differ across gender. Second, rather than performing hierarchical regression as in the standard literature (Taylor and Shore, 1995; Beehr et al., 2000), I evaluate precisely by gender the relative contribution of the variable related to discriminatory practices to the explained variance of the self-reported probability to work full time after 62[1], implementing a Fields decomposition (2003). In the regression I include some observables proved to have a significant effect on retirement decisions in the spirit of the Beehr's model (1986), following the bulk of literature on the predictors of planned retirement age (cf infra for a literature review).

Furthermore, using the two first waves of the HRS, I exploit panel data to remove any bias due to time-constant unobserved heterogeneity, through a Fixed-Effect (FE hereafter) model. A recent literature used longitudinal data to determine the multidimensional factors of bridge employment participation (Wang et al., 2008) or to study the extent to which retirees achieve psychological comfort with their retirement life (Wang, 2007; Van Solinge and Henkens 2008; Wang et al., 2009). In this paper, I exploit longitudinal data to control for a potential measurement error of the individual work environment. Indeed, according to the Beehr's (1986) model, early retirement starts from an individual preference for retirement. This individual-specific effect may lead the respondents, who have a strong preference for retirement, to misreport their feeling about their work environment, especially regarding the discriminatory practices of their managers. That may correspond to what Adams (2002) called the "disgruntled worker effect" and can be compared to the well-known justification bias, highlighted by Parsons (1980) in the case of self-reported

[1]When examining the distribution of the planned retirement age in 1992 in US, a peak is observed at 62. So a low probability to work after 62 corresponds to a high propensity to early exit

health variables. Using a FE approach allows us to control for this individual preference for retirement, if it is assumed to be constant over time.

Finally, I examine whether a change in the self-reported feeling to be discriminated regarding promotions may alter early exit intentions between the two waves of the survey. Using a first-difference model, I test the robustness of the theory of Adams (2002), stating that the feeling to be passed over for promotion stems only from delayed-payment arrangements (Lazear, 1979). If this assertion was true, a change in the self-reported feeling to be passed over for promotion, that would correspond to an entry in the reward phase, would be perfectly expected by older workers. So, this change should not alter their early exit intentions.

My results can be summarized as follows. First, when implementing a Fields decomposition on cross-section data, I find that feeling passed over for promotion contribute merely to retirement decision for women than for men. In addition, estimating a FE model from panel data, I show that some misreporting bias due to a so-called "disgruntled worker effect" (Adams, 2002) may lead to underestimate the effect of self-reported discriminatory practices of employers towards older workers on their retirement intentions. Finally, the first-difference approach supports the theory of Adams (2002) for men but not for women, which implies that some part of the managerial discriminatory attitudes towards older women can not be due only to delayed-payment contracts. This finding highlights a new gender difference in the determinants of retirement decision, based on the nature of the relation employer-employee. As this relation results only from ex ante arrangements between older men and their employer, age-based promotion preference is treated by older men as a consequence of delayed-payment contracts and does not affect their retirement intentions. However, as such arrangements are less frequent regarding women (Dietz et al., 2003), their attachment to their job may be severely reduced in the case of discriminatory practices of their employer towards older workers.

The remainder of this paper is structured as follows. The section 2 briefly reviews the literature on predictors of retirement plans. The section 3 presents the data drawn from the first wave of the HRS and the results obtained from cross-section data. In section 4, I explain the methodology to control for unobserved heterogeneity and to test the incidence of delayed-payment arrangements in the feeling of being passed over for promotion, using panel data. The section 5 concludes.

2 Literature review

In a seminal study, Beehr (1986) showed that from a life course perspective, retirement intentions may be affected by three families of factors: personal factors, non-work psychological factors and work-related factors. Regarding first the effect of financial incentives to retire, Quinn et al. (1990) argued that early exit intentions may be correlated with a feeling of financial comfort, that is agents who expect that their financial resource accumulated will exceed their financial future needs will retire at an earlier age. Considering rather a setting in which agents seek to maximize their lifetime utility, Stock and Wise (1990) developed an option-value model, in which an older worker determines at each period the utility gain to delay retirement decision. This gain may be affected by a double implicit tax of continued activity. Indeed, working one year more implies to pay one supplementary contribution to the pension scheme and to renounce to one year of pension. As long as the option value of continued activity is positive the worker remains employed. Gruber and Wise (1998) measured the implicit tax to continued activity, computing the accrual rate, that is the difference between the sum of discounted yearly pensions expected by a worker if she retires at an age $t+1$ and the sum of discounted yearly pensions expected if she retires at an age t. In an influential worldwide comparative study, they highlighted a strong positive correlation between the implicit tax to continued activity and the exit rate of workers aged 55-64.

The effect of the health status on retirement intentions has also been widely studied. Bound et al. (1999) developed a model to show the theoretical intuitions. They highlighted two main effects of a bad health. First, bad health implies a lower productivity and consequently a lower wage, which reduces the opportunity cost of leisure and encourages a worker to early exit. Second, bad health increases the disutility of work which may lead a worker to leave her job before the legal retirement age. However, the evaluation of the impact of health on retirement intentions is not so straightforward, given the justification bias raised by subjective health measures (Parsons, 1980), that is the propensity of workers to misreport their real health status to justify their lower retirement age. While some authors attempt to control for this bias using more objective measures of health (Bound et al., 1999), Dwyer and Mitchell (1999) and McGarry (2004) showed that subjective health measures may be treated as exogenous, when studying the effect on the expected retirement age. In this respect, McGarry (2004) stressed that we need to include simultaneously subjective and objective measures of health when investigating the determinants of retirement intentions, given the strong correlation between self-reported health status and intentions to early exit. Using the three waves of the American's Changing Lives (ACL) data set, Wang and Shultz (2007) studied more precisely the specific aspects of physical health associated with early exit intentions. They showed that lung diseases or cancer are strongly related to early retirement intentions. In addition, considering that some older workers may continue to work after retired[2], Wang et al. (2008) found from HRS data that bridge employment participation is strongly positively correlated with the good health of workers.

As regards the social aspects of retirement, it appears that the household structure strongly matters. Given that since the eighties, the family model shifted from the breadwinner model to a dual-earner family, a bulk of literature put the emphasis on the interdependence of retirement choices within the couple. Exploiting the US data drawn from the New Beneficiary Survey, a seminal study of Hurd (1988) showed that for one third of married couples, when one individual still working after 50 retires, her spouse retires one year later. To explain theoretically these empirical findings, Gustman and Steinmeier (2002) stated that when one married individual decides to retire, it exerts two offsetting effects on the retirement decisions of her spouse : first, it encourages the spouse to prolong his activity to offset the loss in the income of the household. Second, it leads him to retire if we assume a complementarity of the leisure time within the couple. Indeed, one individual will weight more his leisure time in her utility function if this time is shared with her spouse. From the HRS data, Coile (2003) showed that the effect due to the complementarity of leisure within couple differs across gender. Indeed, it appears quite higher for males than for females. Some other studies support the evidence that early retirement may be treated as an household decision (Henkens, 1999; Szinovacz and Deviney, 2001; Henkens and Van Solinge, 2002, 2005).

In addition, several papers support the evidence that the effect of the household structure on retirement intentions differs across gender. From Norwegian data, Dahl et al.

[2]For this question of bridge employment participation, see also Shultz, 2003

(2003) found that being single increases the preference for early retirement for males, while it decreases this preference for females. In addition, Pienta and Hayward (2002) showed from the HRS data that the number of children under 18 in the family affects negatively the propensity of males to early exit but has no effect on retirement intentions of females. These results may stem from the fact that in US, schooling represents a high cost and corresponds to important financial needs of the family, forcing the man to prolong his activity. Here, the man may be viewed as a family provider (Gradman, 1994). Conversely, Talaga and Beehr (1995) found that women are more likely to retire than men, when some dependents living in the household need some care. So women could be viewed as caregivers. In any case, all these empirical studies showed that determinants of retirement intentions have to be studied, after decomposing by gender.

As retirement intentions are not only driven by financial incentives but result also from a trade-off between consumption and leisure, the quality of the work environment is expected to affect the planned retirement age. In almost all studies, this quality is measured asking individuals about their thoughts and their attitudes about work. It has been shown that workers likely to retire are those who report being tired to work (Beehr et al., 2000), or that their work implies a lack of challenge (Henkens and Tazelaar, 1997), a lack of ascendance in the workplace (Kosloski et al., 2001; Blanchet and Debrand, 2007) or a lack of autonomy (Beehr et al., 2000: Siegrist et al., 2007). In addition, the workers feeling an effort-reward imbalance (Siegrist et al., 2007; Blanchet and Debrand, 2007), reporting that their work has greater physical and psychological demands (Wang, 2007), feeling passed over for promotions (Adams, 2002) or those dissatisfied with their job (Beehr et al., 2000; Wang et al., 2008) will tend to retire earlier. However self-reported measures do not allow to assess precisely the role of work-related variables on retirement intentions, because it could be that these reports may not reflect the real quality of the work environment. Consequently, adverse working conditions may be evoked by workers to justify their preference for early retirement.

Furthermore, as retirement is driven by numerous multidimensional factors (Beehr and Bennett, 2007), it is of interest to evaluate more precisely how much variance of the retirement intentions may be attributable to each of the factors. The standard methodology used is to estimate hierarchical regressions, to measure the variation in the R^2 after including one set of factors in the model. Taylor and Shore (1995) showed the salient role of the age of the respondent to predict her retirement intentions given that it accounts for 12% of the variance of the retirement decision. In addition, once controlled the personal factors and the psychological factors, in the spirit of the Beehr's model (1986), they obtained a significant increment in R^2 by 3% when job and organizational factors are included. Using the same hierarchical regression approach, Beehr et al. (2000) highlighted that gender, wealth and health account for 17% of the variance of the retirement intentions. However, the entry of a set of work-related variables leads to an additional increase in R^2 by 8% and the entry of a set of psychological non work factors leads to a similar increase in R^2 by 9%.

To summarize, after reviewing the salient papers in the literature on retirement decision making, two main gaps have to be filled. First, while gender differences in the predictors of retirement plans and the effect of work-environment on retirement decision have been most of the time studied separately, too few papers investigated whether women reacted in a different way than men to some managerial attitude, especially regarding discriminatory practices regarding promotions. So it could be interesting to measure the contribution of self-perceived age-discrimination within the firm to retirement plans of men and women, in the same spirit of the previous studies of Taylor and Shore (1995) and Beehr et al. (2000).

Second, empirical analysis using longitudinal data emerge recently and, as far I know, no study exploit the panel dimension to control for some unobserved heterogeneity, especially regarding individual preference for retirement. However, controlling for this bias appears to be crucial to estimate more precisely the effects of some subjective variables, related to health or, in the case of this paper, to self-perceived managerial attitudes.

3 Evaluation of the contribution of variables to predict retirement decisions by gender

3.1 Data and descriptive statistics

The sample used in this analysis is drawn from the Health and Retirement Study, provided by the University of Michigan, that surveys more than 22000 Americans over the age of 50 or more every two years, from 1992 to 2007. In the first part of this paper, I use the first wave of this survey for the year 1992. I restrict the sample to individuals aged between 51 and 61 and still working, whose hourly wage ranges from 1$ to 100$ and I exclude the self-employed. So in contrast to Adams (2002), I include also women in my sample and I want to check whether the relative contribution of each variable to explain retirement intentions differ across gender.

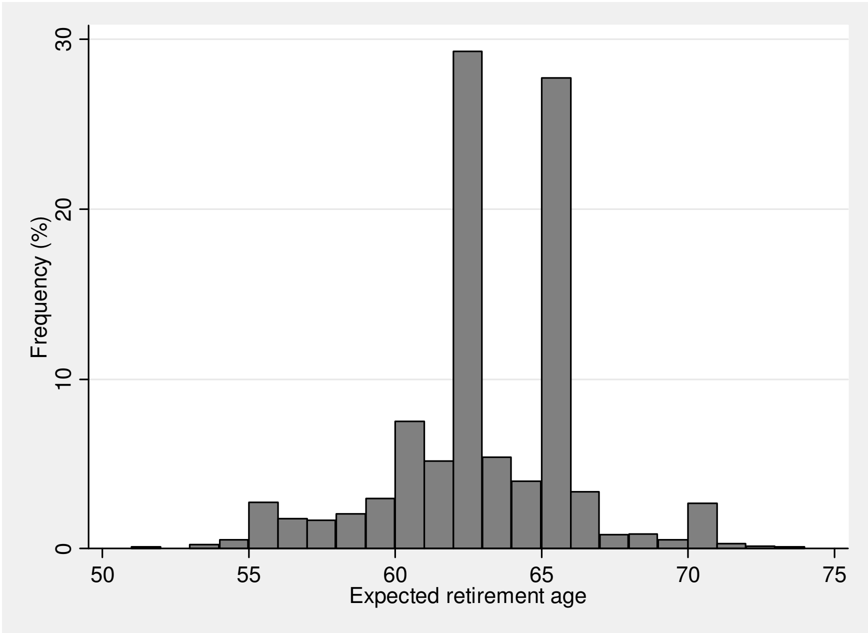
Following Adams (2002), the measure of retirement plans used in this paper is the subjective probability to work full-time after 62. Although using subjective probability to study expectations has encountered economist's skepticism in the early 90's, a number of empirical papers showed that respondents not only give the responses 0, 50 or 100 but use the full range of potential probabilities [3]. In addition, this probability provides information about the expected retirement age and especially on the propensity of the respondent to retire early. Indeed, when examining the distribution of the expected retirement age for this sample plotted in the figure 1, we observe a first peak at 62. It indicates that a low probability to work after 62 may be assimilated to an high propensity to early retirement.

I exploit the richness of information provided by the survey to evaluate the real contribution of each potential predictor of retirement intentions, by gender. Following Taylor and Shore (1995) and Beehr (1986, 2000), I group the independent variables into three family of factors. As regards personal factors, I include first the age of the respondent. Indeed, as shown in many studies (Kim and Feldman, 2000; Wang et al., 2008; Taylor and Shore, 1995), one observe a decline of physical and cognitive abilities for older workers, that may affect severely their attachment to their job, which supports a life course perspective. Furthermore, I control for the years of education, given that this dimension has been proved to affect retirement intentions (von Bonsdorff et al., 2009), given that high skilled workers may have better opportunities to continued activity, even though they approach the retirement age, owing to their better professional knowledge. I also include some proxy variables of the financial situation of the respondent. In the same spirit of Beehr et al. (2000) and Gruber and Wise (1998), I compute the Social Security Wealth (SSW hereafter) if the respondent retires at age a, that is the discounted sum of pension flows that he will benefit until death if he retires at age a[4]. Furthermore, I include a dummy equal to one if the plan is a defined-benefit pension plan. The introduction of this variable is twofold: first

[3] For a survey of the use of subjective probabilities, see Manski (2004)

[4] This indicator has been obtained with data obtained directly from employers about the private pension schemes of each respondent and from the Social Security Administration related to the wage growth, the inflation rate and the interest rate

Figure 1: The distribution of expected retirement ages in the USA in 1992



Source : HRS, wave 1992

it serves as an other proxy variable of financial incentives to retire and second, it allows to test the presence of implicit contracts (Hutchens, 1986; Heywood et al., 2007), proved to have an influence on the individual feeling to be passed over for promotion (Adams, 2002). In addition to these specific variables, measuring precisely the financial incentives of early retirement, I include also the hourly wage and the household assets of the respondent.

In the same family of personal factors, I control also for the health of the respondent, using the standard ordered self-rated measure, that is respondents are asked: "Would you say your health is excellent, very good, good, fair or poor?". I treat this variable as an ordered variable, coded from one, if the individual reports a fair/poor health, to 4, if the respondent reports an excellent health. As emphasized in numerous previous studies, (Taylor and Shore, 1995; Beehr et al., 2000; McGarry, 2004; Wang et al., 2008), self-perceived health appears to be one of the strongest predictor of retirement intentions. Similarly, I include also a dummy equal to one if the worker reports any health problem that may limit the kind of activity he can do. In addition, I control for more objective variables, such that a dummy equal to one if the respondent reports that a doctor has ever told him in the last twelve months that he had cancer and another equal to one if a doctor has ever told him that he had a lung disease, proved to have a significant effect on retirement plans (Wang and Shultz, 2007).

In the second family of factors, that is non-work psychological factors, I consider some covariates related to the household structure of the individual, following the previous literature on the influence of marital characteristics on retirement plans (Hurd, 1988; Coile, 2003; Henkens, 1999; Szinovacz and Deviney, 2001; Henkens and Van Solinge, 2002, 2005). I include a dummy equal to 1 if the individual lives in couple, and also a dummy equal to one if the respondent's spouse is already retired, bearing in mind that the effect of these covariates on retirement intentions may strongly differ across gender (Talaga and Beehr, 1995; Dahl et al., 2003). I also control for the number of children still at home, given the fact that the effect of this variable on retirement expectations may be ambiguous. Indeed, the number of children may encourage women to work longer, to make up for losses in retirement benefits due to discontinuous career during the reproductive phase, as shown by Hank (2002). But in a breadwinner model of the family, where married mothers exit the labour force earlier than childless women, the husband may be treated as the family provider (see Gradman, 1994), whose economic decisions are more closely tied to family demands. In this case, the number of dependent children, namely still at home, implies a supplementary cost for the household, and may encourage husbands to delay retirement decisions (Dahl et al., 2003; Pienta and Hayward, 2002).

In the third family of predictors, I consider a set of work-related variables that may influence strongly retirement intentions. Following the previous studies, I control for the individual perception of the work environment. As regards the self-perceived quality of the job, the respondents are asked whether their job requires a lot of effort (Wang, 2007), whether they have to do the same things over and over (Henkens and Tazelaar, 1997), whether they have freedom to decide how to do their work (Beehr et al., 2000: Siegrist et al., 2007), whether they feel satisfied at work (Beehr et al., 2000; Wang et al., 2008) or whether they feel fairly paid (Siegrist et al., 2007; Blanchet and Debrand, 2007). In addition, I include some variables related to the self-perceived quality of the work environment, like the friendliness of the coworkers (Kosloski et al., 2001), and also the feeling of a preference of the employer for young people regarding promotions (Adams, 2002). As shown by Adams (2002), the effect of the latter on retirement intentions may result from three different causes. First, the worker feels a real age-discrimination from the employer and so intends to retire as early as possible. Second, this feeling of discrimination is due to an intrinsic dissatisfaction of the worker for his job and in that case he will attribute his misfortune to some discriminatory practices against older workers. Third, the flat profile of wages of the worker in the end of career may be explained by a delayed payment contract, implying increasing wages with tenure and leading to a reward phase, in which the wage received by a worker exceeds her marginal productivity. Following Adams (2002), I control for the tenure of a worker in her job, to test whether he might be in his reward phase or not.

Descriptive statics are provided in the table 1 decomposing by gender to account for the difference in means between males and females.

First, even though men and women have the same age on average, women report a higher propensity to retire early than men. It could seem somewhat surprising given that men have higher financial incentives to retire early than women. For instance, the hourly wage for men is higher than 15 dollars while that for women is around 10 dollars. Consequently, men are entitled to higher pension rights than women and should feel more financial comfort to exit their job early. In this respect, this conclusion should be emphasized by the fact that a higher proportion of males have a defined-benefit pension scheme (see also Dietz et al., 2003), which provides them some future financial resource with certainty and allows them to predict precisely when the pension wealth accumulated will exceed their financial future needs to retire.

Nevertheless, when examining the difference in characteristics between males and females, it appears that the higher preference of women for early retirement may be due to two main causes. First, while only 2% of males report having a retired spouse, it is the case for 14.58% of females. As demonstrated by some previous studies treating retirement

Table 1: Descriptive statistics by gender

Variable	Means	
	Women	**Men**
Dependent variable		
probability of working after 62	0.4241	0.4923
Personal factors		
age	55.41	55.43
years of education	12.69	12.61
SSW (in 10^5 dollars)	0.4390	0.9338
defined-benefit pension plan	0.3941	0.4982
hourly wage	10.52	15.54
household assets (in 10^5 dollars)	1.9729	1.8196
excellent	0.2684	0.2551
very good	0.3223	0.3291
good	0.2898	0.3003
fair/poor	0.1195	0.1156
lung disease	0.0664	0.0522
cancer	0.07	0.0274
health limitations in activity	0.0767	0.0881
Non-work variables		
lives in couple	0.6621	0.8543
spouse retired	0.1458	0.0203
number of dependent children	0.3986	0.4513
work-related variables		
physically demanding job	0.3727	0.3804
monotonous job	0.712	0.5859
freedom at work	0.6607	0.7241
fair pay	0.7205	0.7967
satisfied of the job	0.6563	0.6537
friendly co-workers	0.8939	0.8716
employer tends to give younger people preference for promotions	0.1395	0.1802
tenure	14.51	19.18
Number of observations	2243	2258

Source : HRS (wave 1992)

as an household decision (Henkens, 1999; Szinovacz and Deviney, 2001; Henkens and Van Solinge, 2002; Coile, 2003), it could be that women intend to exit earlier to share their leisure time with their spouse. In this respect, following Talaga and Beehr (1995), if we treat women as care-provider for household, it is consistent that for women, the effect due to the complementarity of leisure within the couple (Gustman and Steinmeier, 2002) dominates, which may explain why women report a lower probability to work after 62 than men.

Second, even though men and women report the same intrinsic satisfaction for their job, women are more likely to report an effort-reward imbalance that may encourage them to leave their job early (Kosloski et al., 2001; Siegrist et al., 2007). In addition, a higher proportion of women feel passed over for promotions. As argued by Adams (2002), this feeling could stem from delayed payment contracts, implying that the wage will exceed the marginal productivity of a worker at one time of the career, discouraging the firm to offer new promotions to this employee. However, this theory is not supported by the fact that women, who have lower tenure than men and should be therefore less likely to reach the reward phase, report with a higher probability a preference of their employer for younger people regarding promotions.

To summarize, from the cross-section data, I should test two main hypothesis. First, the non work variables related to the household situation should have more weight to explain retirement intentions for women than for men. This first hypothesis may seem equivalent to the result already obtained by some previous studies (Talaga and Beehr, 1995; Szinovacz and Deviney, 2001) that the presence of dependents in the household is a stronger predictor of retirement plans for women than for men. Furthermore, the second hypothesis to test is whether the influence of self-perceived discriminatory practices on retirement intentions differs across gender. More precisely, to extend the previous work of Adams (2002), I want to check whether this effect becomes non significant for women once I include variables related to the presence of delayed payment contracts, such that the tenure or the enrollment in a defined-benefit pension plan.

3.2 Methodology and results

My analysis consists in estimating precisely the specific contribution of each regressor to the explanation of retirement intentions, measured for each individual i by the self-reported probability to work full time after 62, that I denote by Y_i. I consider for each observation a $1 * K$ vector X_i made up of k explanatory variables and an error term u_i, supposed to be normally distributed such that $u_i \sim N(0, \sigma^2)$. I want to estimate the following equation:

$$Y_i = X_i\beta + u_i \quad \text{with } u_i \sim N(0, \sigma^2) \tag{1}$$

where β is a $K * 1$ vector of parameters to estimate. For this regression using cross-section data, I assume all explanatory variables are exogenous, in other words $E(u_i|X_i) = 0$, so a simple OLS procedure is performed to estimate β. I will discuss this assumption in the next section. In addition, I do not control for a potential selection bias, while the dependent variable is observable only for older individuals still at work and not for the entire population. As highlighted by Debrand et Blanchet (2007), when attempting to investigate the predictors of retirement intentions, selection bias may lead to underestimate the effect of some variables, for instance the health status, on the individual retirement decisions. Indeed, assuming that intentions depend simultaneously on observable characteristics and also from an unobservable preference for leisure, the individuals reporting a bad health but who are still working may have a lower preference for leisure than individuals in bad health conditions and out of the labour force. As the sample includes only workers with a higher attachment to their job, the effect of health may be biased downward. I tackle this issue arguing that the sample is restricted to workers aged between 51 and 61, so under the age of 62, that may be treated as the age at which individuals with the lowest attachment to their job will retire. Consequently, I can expect that the selection issue will not affect strongly my results.

The contribution of this section is to adopt a new methodology to measure the share of explained variance in retirement intentions attributable to each variable. While the standard approach used (Taylor and Shore, 1995; Beehr et al., 2000) is to perform hierarchical regressions, I implement a Fields (2003) decomposition, based on the following equality

$$Var(Y) = \sum_k cov(\beta X_k, Y) + cov(u, Y) \tag{2}$$

Consequently (2) may be expressed in the following way:

$$\sum_k \frac{cov(\beta X_k, Y)}{Var(Y)} + \frac{cov(u, Y)}{Var(Y)} = 100\% \tag{3}$$

The first term on the left-hand side is equal to the R^2, so we can determine the relative weight of each variable X_k in the explanation of the explained part of the expected retirement age. I report the results of the OLS estimates and of the Fields decomposition in the table 2.

The table 2 provides some interesting results, some of them are consistent with findings of previous studies about retirement intentions and some others support new empirical evidence on the difference in determinants of retirement decisions between men and women. For instance, the estimates show the salient role of chronological age to predict retirement intentions for both gender, in line with previous results of Taylor and Shore (1995), which supports once again the decision to retire in a life course perspective (Kim and Feldman, 2000; Wang et al., 2008). Furthermore, as evidenced by Quinn and Burkhauser (1990) or Gruber and Wise (1998), the financial incentives to retire, measured here as the discounted sum of expected pensions that the agent will receive until death if he retires at a specific age, also influences strongly the retirement decision of men and women, accounting for around 11% of the explained variance in self-reported retirement expectations. This relative predictive power of financial situation is quite the same as that obtained by Beehr et al. (2000) from hierarchical regressions. One last strong predictor of retirement decision common to men and women is the intrinsic satisfaction at work. Even though the relative contribution of this work-related characteristic to predict retirement decision is more than twice higher for men than for women (respectively 40% and 16%), it accounts for both gender for a large share of the R^2. While these findings are consistent with previous results (Beehr et al., 2000; Wang et al., 2008), they may be severely biased. Following Blanchet and Debrand (2007), if the intrinsic job satisfaction could be assimilated to an unobserved individual heterogeneity in term of preference for leisure, it is not straightforward to isolate the effect of each job characteristic on the retirement decision of older workers, given that each effect may be severely correlated to the individual preference for leisure. I will address this issue in the next section of the paper.

Recall that the aim of this section is to test two hypothesis: the predictors related to the household situation should have more weight to explain retirement intentions for women

Table 2: Specific contribution of each factor to the explanation of expected retirement age by gender

Variable	Women			Men		
	Coef.	Standard error	Share of the R^2 explained (in %)	Coef.	Standard error	Share of the R^2 explained (in %)
Personal factors			**32.7**			**45.21**
age	0.013***	(0.003)	9.16	0.015***	(0.003)	10.91
years of education	0.005	(0.004)	1.02	0.003	(0.003)	1.19
SSW (in 10^5 dollars)	-0.046***	(0.010)	12.24	-0.025***	(0.007)	11.3
DB pension plan	0.001	(0.018)	-0.1	-0.045**	(0.018)	6.71
hourly wage	0.002	(0.002)	-0.45	0.002	(0.001)	0.03
wealth (in 10^5 dollars)	-0.008***	(0.002)	7.6	-0.005*	(0.003)	1.48
ordered health status	0.013	(0.013)	0.67	0.049***	(0.013)	9.92
lung disease	0.003	(0.033)	-0.01	-0.039	(0.038)	0.83
cancer	0.034	(0.031)	0.70	-0.058	(0.049)	0.61
health limitations	-0.059**	(0.030)	1.87	-0.048	(0.030)	2.23
Non-work variables			**39.85**			**4.48**
lives in couple	-0.127***	(0.018)	33.63	0.025	(0.024)	0.74
spouse retired	-0.061**	(0.024)	6.14	-0.095*	(0.053)	1.28
dependent children	0.011	(0.016)	0.08	0.041**	(0.017)	2.46
work-related variables			**27.45**			**50.31**
physically demanding job	-0.033*	(0.017)	2.40	0.008	(0.019)	-0.024
monotonous job	-0.017	(0.018)	0.55	-0.047***	(0.017)	4.59
freedom at work	0.035**	(0.017)	2.6	0.026	(0.019)	1.66
fair pay	-0.038**	(0.018)	2.63	-0.021	(0.021)	0.30
satisfied of the job	0.091***	(0.017)	16	0.151***	(0.017)	39.87
friendly co-workers	-0.006	(0.026)	-0.03	0.017	(0.024)	0.57
employer prefers younger people for promotions	-0.050**	(0.023)	2.31	-0.017	(0.021)	0.74
tenure	-0.001	(0.001)	0.99	-0.001**	(0.001)	2.6
intercept	-0.290*	(0.168)		-0.578***	(0.163)	
Number of observations		2258			2243	
R^2		0.0915			0.0827	

Source : HRS (wave 1992)

Note : Estimates using OLS model, standard errors being corrected from heteroscedasticity using White method

Significance thresholds : * : 10% ** : 5% *** : 1%

The 3^{rd} and the 6^{th} column have been obtained through a Fields decomposition. For each column the sum of values in bold case equals 100%

than for men and the influence of self-perceived discriminatory practices on retirement decisions should differ across gender. The table 2 supports strongly the first hypothesis. Indeed, the set of variables related to the household situation accounts for more than 30% of the R^2 for women, while it accounts for only 4.5% of the R^2 for men. More precisely it appears that being in couple and having one spouse already retired has a very strong negative impact on the expected probability of working after 62 for women, while its impact is not significant for men. Here, results are consistent with a role theory, in which women can be treated as care providers of the household (Talaga and Beehr (1995); Szinovacz and Deviney, 2001).

Furthermore, while the self-reported feeling to be passed over for promotion affects negatively and in a significant way the expected probability to work after 62 for women, this effect is not significant for men. Adams (2002) argued that for men, it could stem from the fact that reporting a preference of the employer for young people regarding promotions is only the result of delayed payment contracts. Indeed, after including in the regression some proxy variable indicating the presence of such contracts, like the tenure or the enrollment in a pension plan, the effect becomes non significant for men. However, this point does not hold for women. As shown in the table 2, it seems that delayed payment contracts do not have any significant effect on females' retirement intentions, and do not cancel out the effect of the feeling to be discriminated on their retirement plans. It appears that retirement decision of women may be more sensitive than that of men to some discriminatory attitudes of the employers.

However, these results have to be taken with caution. Recall that as in the standard literature (Taylor and Shore, 1995; Beehr et al., 2000; Wang and Shultz, 2007), I did not take into account a potential unobserved heterogeneity that could stem from a different preference for leisure between respondents. The role of this individual-specific effect is clearly highlighted by the salient contribution of the intrinsic job satisfaction to explain retirement intentions for both gender. Most of previous studies interpreted this finding, as a clear evidence of the crucial role of job satisfaction to predict the retirement decision. However, some blanks need to be filled. First, to what extent this unobserved heterogeneity may bias the marginal effects of some other predictors of retirement intentions, for instance the feeling to be passed over for promotion? Second, assuming that this preference for leisure is constant over time, as predicted in the continuity theory (Beehr et al., 1986), to what extent a change in some work-related variables, for instance a change in employers attitudes towards older workers, may affect their retirement plans? These two issues can not be addressed using only cross-section data, so I will consider in the next section two waves of the survey, to exploit longitudinal data.

4 A panel data estimate of factors influencing changes in retirement intentions

4.1 Using panel data to control for the "disgruntled worker effect"

As noted in the introduction, the use of longitudinal data does not aim at determining the multidimensional factors of bridge employment participation (Wang et al., 2008) or to study the extent to which retirees report comfort with their retirement life (Wang, 2007; Van Solinge and Henkens 2008; Wang et al., 2009). In this paper, I consider a panel data to control for an unobserved individual preference for leisure, that could be severely correlated to some other work-related variables, like the feeling that the employer has a preference for younger people regarding promotions. It could correspond to a measure of the disgruntled worker effect (Adams, 2002), given that it tests whether the effect of the self-reported feeling to be discriminated on the retirement decision could be altered, once one allows this feeling to be correlated with the satisfaction of the individual at work.

In that goal, I consider a fixed-effect approach to wipe out the unobserved time-constant individual specific effect. More formally, I estimate the following model

$$Y_{it} = X_{it}\beta + \alpha_i + v_{it} \quad \text{with } v_{it} \sim N(0, \sigma_v^2) \tag{4}$$

where Y_{it} is the probability to work full time after 62 reported by the respondent i at year t, X_{it} is a $1{*}K$ vector made up of k explanatory variables, α_i represents the individual specific effect, and v_{it} is an error term supposed to be normally distributed such that $v_{it} \sim N(0, \sigma_v^2)$. If α_i is significantly correlated with some explanatory variables, the OLS approach would yield inconsistent estimates and a FE approach is needed. Indeed, implementing a within transformation, that is subtracting each variable by its average over time, allows to cancel out the time constant term α_i. So doing, it provides consistent results of the marginal effects of some endogenous predictors on retirement intentions. In this subsection, I test whether the disgruntled worker effect is significant, that is whether the marginal effect of the feeling to be passed over for promotion on retirement intentions, obtained through a FE approach, differs strongly from the marginal effect obtained through an OLS approach.

While it appears that using longitudinal data is a good way to measure the disgruntled worker effect, this strategy comes at a cost. Indeed, the within transformation wipes out all time-invariant variables, so it can not yield the marginal effects of these covariates on intentions to exit early. So, I have to check whether respondents have the same feeling to be discriminated by their employer over time or not. In this section, I restrict the sample to individuals still at work in 1992 and 1994 and aged between 51 and 61 in 1994.

The descriptive statistics provided in the table 3 show that the feeling of being passed over for promotion varies over time, so I can examine its influence on retirement intentions, using a FE approach. More precisely, it appears that this feeling has increased strongly among women between 1992 and 1994, while this increase is lower for men. In addition, the expected probability of working after 62 falls on average between 1992 and 1994 for both gender. It supports once again the theory of a decline in the attachment to the job with age. However, to estimate the equation (4), I do not include neither the age nor the tenure. Indeed, after implementing the within transformation, these two variables will be the same for all respondents.

Nevertheless, after balancing the panel, I end up with less than 850 observations for each gender, while for my cross-section study, I considered a wider sample. Consequently, to test whether accounting for a fixed effect may alter significantly the effect of self-perceived employer's age-biased preference on retirement intentions of respondents, I have to report the results of a simple pooled OLS specification and compare the marginal effect of the variable of interest between both models. The results of the FE specification and the OLS model, are reported in the tables 4 and 5 respectively for men and women.

First for both gender, the Pearson's coefficient, that is the share of the variance of the error term v_{it} explained by the variance of the specific effect α_i is around 50%. It means that unobserved heterogeneity, that we may assimilate to a difference in individual preference for leisure, has to be accounted for when determining retirement intentions. In addition, a Hausman test shows that the null hypothesis of an absence of correlation between the individual specific effect and the other predictors of retirement intentions has to be rejected. Consequently, a FE approach appears to be the best specification.

Table 3: Descriptive statistics by gender of panel data

Variable	Means			
	Women		Men	
	1992	1994	1992	1994
Dependent variable				
probability of working after 62	0.5322	0.2717	0.5692	0.283
Personal factors				
hourly wage	10.67	11.26	15.607	16.143
household assets (in 10^5 dollars)	1.65	1.98	1.8289	2.0333
excellent	0.2911	0.2367	0.2958	0.2228
very good	0.3621	0.387	0.3365	0.3689
good	0.2592	0.2769	0.2802	0.3078
fair/poor	0.0876	0.0994	0.0874	0.1006
lung disease	0.0568	0.0781	0.0467	0.0695
cancer	0.0757	0.084	0.0263	0.0335
health limitations in activity	0.0556	0.0615	0.0802	0.0754
Non-work variables				
lives in couple	0.6426	0.6201	0.8743	0.8778
spouse retired	0.1148	0.1219	0.0119	0.0311
number of dependent children	0.4355	0.3396	0.4994	0.3234
work-related variables				
employer tends to give younger people preference for promotions	0.1361	0.2059	0.1880	0.2216
Number of observations	845		835	

Source : HRS (wave 1992 and 1994)

Examining now the magnitude of the disgruntled worker effect, tables 4 and 5 show that it may lead to bias downward the contribution of the self-reported feeling to be passed over for promotion to the retirement decision for both gender. This downward bias is sharper for men, given that the negative marginal effect of the variable of interest on the retirement intentions is twice higher using a FE specification (-0.091) than using a OLS model (-0.048). For women, the downward bias induced by heterogenous preference for retirement is also observed (marginal effect equals -0.103 in a FE model and -0.069 in an OLS model), even though it is lower than for men.

These findings differ from previous results obtained by Adams (2002). Indeed, he showed that after adding controls for disgruntled worker effect, as the friendliness of the workplace or the fairness of the pay, the marginal effect of the feeling to be passed over for promotion on retirement intentions did not change substantially than without controlling for this effect. He concluded that misreporting bias did not play a significant role in the individual report of promotion practices. In this section, I show that omitting this misreporting bias may lead to severely underestimate the negative effects of some adverse managerial attitudes on the attachment of older workers to their job, especially for men. Nevertheless, such discriminatory practices should be prohibited by policy makers only if they do not result from firms effort to elicit better performance through delayed-payment arrangement (Adams, 2002). In the next section, I use the panel dimension of the data to test this assertion.

Table 4: Comparing results from a FE approach and a OLS model for men

Variable	FE		OLS	
	Coef.	S.E	Coef.	S.E.
Personal factors				
hourly wage	-0.009***	(0.003)	-0.003**	(0.001)
household assets (in 10^5 dollars)	-0.002	(0.006)	-0.002	(0.002)
health	0.051**	(0.025)	0.059***	(0.014)
lung disease	-0.256**	(0.104)	0.000	(0.039)
cancer	-0.287	(0.185)	0.064	(0.052)
health limitations in activity	-0.071	(0.053)	-0.034	(0.035)
Non-work variables				
lives in couple	0.076	(0.079)	-0.035	(0.028)
spouse retired	-0.133	(0.097)	-0.095	(0.062)
number of dependent children	0.255***	(0.034)	0.103***	(0.019)
work-related variables				
employer tends to give younger people preference for promotions	-0.091**	(0.036)	-0.048**	(0.022)
intercept	0.325***	(0.108)	0.327***	(0.047)
Number of observations	1670		1670	
R^2 within	0.1067			
Pearson's coefficient	0.4936			
hausman test	p-value=0.000			

Note : Results in the first and second column have been obtained through a Fixed-Effect approach

Results in the third and fourth column have been obtained through a pooled OLS specification

Significance thresholds : * : 10% ** : 5% *** : 1%

Source : HRS (wave 1992 and 1994)

Table 5: Comparing results from a FE approach and a OLS model for women

Variable	FE		OLS	
	Coef.	S.E	Coef.	S.E.
Personal factors				
hourly wage	-0.014***	(0.004)	0.001	(0.001)
household assets (in 10^5 dollars)	-0.013**	(0.007)	-0.010***	(0.003)
health	-0.027	(0.029)	0.012	(0.014)
lung disease	-0.259**	(0.113)	0.019	(0.036)
cancer	-0.307*	(0.183)	0.007	(0.033)
health limitations in activity	0.000	(0.059)	-0.025	(0.039)
Non-work variables				
lives in couple	0.210***	(0.078)	-0.077***	(0.019)
spouse retired	0.011	(0.058)	-0.055*	(0.028)
number of dependent children	0.061	(0.042)	0.022	(0.018)
work-related variables				
employer tends to give younger people preference for promotions	-0.103***	(0.038)	-0.069***	(0.023)
intercept	0.546***	(0.104)	0.434***	(0.042)
Number of observations	1690		1690	
R^2 within	0.0501			
Pearson's coefficient	0.4954			
hausman test	p-value=0.000			

Note : Results in the first and second column have been obtained through a Fixed-Effect approach
Results in the third and fourth column have been obtained through a pooled OLS specification
Significance thresholds : * : 10% ** : 5% *** : 1%
Source : HRS (wave 1992 and 1994)

4.2 Using panel data to test the influence of delayed payment contracts by gender

In his paper, Adams (2002) highlighted a high positive correlation between the individual probability to report discriminatory practices of their employer regarding promotions and the existence of delayed-payment contracts. Such arrangements imply a reward phase during which the worker is overpaid, with respect to her marginal productivity, which will reduce incentives of employer to promote her. If this assertion was true, a variation in the self-reported promotion practices observed between 1992 and 1994, that would correspond to an entry in the reward phase, would be perfectly expected by the worker. So, this change should not alter her early exit intentions. An alternative hypothesis could be that the worker reported an effective unexpected change in management practices in her firm which may lead her to revise her retirement plans.

To test the null hypothesis of perfectly expected change in managerial attitudes, I perform a first-difference model for each gender, subtracting for each variable the value in 1994 by the value in 1992. It allows to remove some unobserved heterogeneity due to different preferences for retirement and to estimate the effect of a change in covariates in a variation in retirement plans. After the first-difference transformation, the variable related to self-perceived age-discrimination can take three values: -1 if the worker reported age-discrimination only in 1992, 0 if the variable did not change over time and 1 if the respondent reported age-discrimination in 1994 but not in 1992. On the one hand, the value of -1 can not be attributed to an entry in a reward phase, given that it should correspond theoretically to a reduction in the probability to be promoted. Consequently, the effect of such a change on retirement intentions measures only the consequences of an improvement of managerial practices towards older workers on their retirement intentions. On the other hand, cases in which the variable of interest takes the value 1 may be attributed to an entry in the reward phase. A non significant effect of such changes on retirement intentions would be therefore consistent with the view that delayed-payment arrangement are the only one explanation to age-biased preferences of employers for promotion. The results of the first-difference model are reported in the table 6.

First, the results show that the dummy equal to one if the individual feels passed over for promotions only since 1994 is not significant for men but is significant at a 10% level for women. It implies that the claim of Adams (2002) is true for men, while for women this view has to be more nuanced. Indeed, the weak significance of the dummy for women indicates that a part of the increasing age-biased employer preference for promotions has been unexpected by female workers and could not be therefore explained by implicit contracts signed ex ante by the worker and the employer.

In addition, less adverse managerial attitudes towards older workers in 1994 than in 1992 encourage in a significant way continued activity but only for men. It may be consistent with the theory of Adams (2002). As males expect a reduction in their probability of promotion during their reward phase, lower age-based discrimination corresponds to an unexpected shock, which leads men to revise their retirement plans and to prolong their activity. Even though such a change in attitudes of employer is not consistent with the theory of delayed payment arrangements to discourage shirking, it may be quite efficient to maintain older workers in employment but only for men.

These two findings may be linked with the role theory explaining gender differences in determinants of retirement intentions. As women have a lower probability to benefit from employer-sponsored pension plans (Dietz et al., 2003), they are less concerned than men

Table 6: Results from a first-difference model

Variable	Women		Men	
	Coef.	S.E	Coef.	S.E.
Personal factors				
variations in hourly wage	-0.007**	(0.003)	-0.004	(0.002)
variations in household assets (in 10^5 dollars)	0.001	(0.004)	0.003	(0.005)
better health than last period	-0.023	(0.043)	0.018	(0.042)
worse health than last period	0.074*	(0.041)	-0.043	(0.038)
lung disease only in 1994	-0.012	(0.085)	-0.055	(0.076)
cancer only in 1994	-0.101	(0.084)	0.001	(0.148)
more health limitations	0.038	(0.081)	-0.047	(0.054)
less health limitations	0.011	(0.087)	0.150***	(0.051)
Non-work variables				
lived in couple only in 1992	-0.123	(0.087)	-0.052	(0.087)
lives in couple only since 1994	-0.033	(0.103)	0.106	(0.099)
spouse retired only in 1994	0.005	(0.069)	0.071	(0.095)
more dependent children	-0.135*	(0.075)	0.157*	(0.095)
less dependent children	0.061	(0.044)	-0.026	(0.032)
work-related variables				
felt passed over for promotions only in 1992	-0.073	(0.062)	0.126**	(0.059)
feels passed over for promotions only since 1994	-0.068*	(0.040)	-0.012	(0.042)
Number of observations	845		835	
R^2	0.0224		0.0292	

Note : Results have been obtained through a First-Difference approach

Significance thresholds : * : 10% ** : 5% *** : 1%

Source : HRS (wave 1992 and 1994)

by delayed-payment contracts. Consequently, the feeling to be passed over for promotion in the end of career may lead older women to leave early the labour force, given that they attribute some part of adverse managerial attitudes to blatant discrimination, which reduces their attachment to their job. For men, it is the reverse story. As they are highly concerned by firm-provided pension scheme, they treat discriminatory practices of their employer towards older workers as a consequence of delayed payment arrangements. Consequently, the feeling of being passed over for promotion does not affect significantly their retirement intentions. However, in this setting, a reduction in age-based discrimination regarding promotion may encourage men to stay in their job for a longer time.

5 Concluding remarks

This paper exploits the two first waves of the HRS to examine the individual feeling of workers to be passed over for promotion and its influence on their retirement plans, decomposing by gender. Previous work put forward the idea that this feeling could be explained for men by delayed payment contracts signed ex ante with their employer, implying increasing wages with tenure in the beginning of the career and a lower probability to be promoted in the end. Consequently, there is no room for public policy to deters employers from discriminating older workers regarding promotions, given that such practices aimed to elicit better performance of workers and result from implicit arrangements with employees.

This study examined whether this result holds for women. First, accounting for the multi-level nature of retirement decision making, I used cross-section data to estimate the relative contribution of the feeling of being passed over for promotion to retirement plans of men and women, including a rich set of covariates proved to affect strongly retirement decision. I found that self-perceived promotion preferences for younger people play a non negligible role in explaining retirement intentions but only for women. To test whether the result is robust to some misreporting bias, due to an heterogeneity in individual preferences for retirement, I used panel data to perform a Fixed-Effect specification. Confronting the results obtained with estimates obtained without controlling for unobserved heterogeneity, I showed that omitting this bias may lead to underestimate the negative effect of such discriminatory practices towards older workers on their retirement plans. Last but not least, I tested whether gender differences in the effect of the feeling of being discriminated on retirement decision could stem from differences in the sources of discrimination. Implementing a first-difference model, I found that age-based discrimination towards older men can be totally explained by delayed-payment arrangements while regarding older women, promotion preferences of their employer may be partly due to blatant discrimination and therefore encourage women to leave their job early.

As it stands, it is worth noting that this study has some limitations, especially regarding the measurement of the work-related variables. Even though some part of the misreporting bias regarding subjective measures of the quality of work-environment and managerial attitudes has been removed through a Fixed-Effect model, the other part of the bias linked to a change in the preference for retirement over time still remains. So, a change in the feeling of being passed over for promotion could be also due to a change in the attachment to the job, partially disconnected from management practices of the employers. One solution to remove this bias would be to exploit matched employer-employee data, with at the same time information about the self-perceived quality of working conditions of older workers and their retirement intentions and also objective information from a sample of employers about management practices in the firm for each age group of workers.

Investigating how adverse working conditions affect retirement intentions should be a key concern for policy makers but also for managers. Indeed, in a setting of policies aimed at raising the exit age of older workers, restricting access to early exit, a reduction in the attachment to the job could translate into a psychological withdrawal of an older worker from her activity and therefore a strong fall in her productivity. Consequently, it is of the interest of employers to better grasp the consequences of their management practices by age on the propensity to early retirement of their older employees.

References

Adams, G.A. (1999). Career-Related Variables and Planned Retirement Age: An Extension of Beehr's Model. *Journal of Vocational Behavior*, 55(2):221–235.

Adams, G.A. and Beehr, T.A. (1998). Turnover and retirement: A comparison of their similarities and differences. *Personnel Psychology*, 51(3):643–665.

Adams, S.J. (2002). Passed over for promotion because of age: an empirical analysis of the consequences. *Journal of Labor Research*, 23(3):447–461.

Beehr, T.A. (1986). The process of retirement: A review and recommendations for future investigation. *Personnel Psychology*, 39(1):31–55.

Beehr, T.A. and Bennett, M.M. (2007). Examining retirement from a multi-level perspective. In Shultz, K.S. and Adams G.A., editors, *Aging and work in the 21st century*, pages 277–302. New York: Psychology Press.

Beehr, T.A., Glazer, S., Nielson, N.L., and Farmer, S.J. (2000). Work and nonwork predictors of employees' retirement ages. *Journal of Vocational Behavior*, 57(2):206–225.

Blanchet, D. and Debrand, T. (2007). Aspiration à la retraite, santé et satisfaction au travail : une comparaison européenne. Working Papers DT1, IRDES institut for research and information in health economics.

Bound, J., Schoenbaum, M., Stinebrickner, T.R., and Waidmann, T. (1999). The dynamic effects of health on the labor force transitions of older workers. *Labour Economics*, 6(2):179 – 202.

Coile, C. (2003). Retirement incentives and couple's retirement decisions. NBER Working Papers 9496, National Bureau of Economic Research, Inc.

Dahl, S.A., Nilsen, O.A., and Vaage, K. (2003). Gender differences in early retirement behaviour. *European Sociological Review*, 19(2):179–198.

Daniel, K. and Heywood, J.S. (2007). The determinants of hiring older workers: Uk evidence. *Labour Economics*, 14(1):35 – 51.

Dietz, B.E., Carrozza, M., and Ritchey, P.N. (2003). Does financial self-efficacy explain gender differences in retirement saving strategies? *Journal of women & aging*, 15(4):83.

Dwyer, D.S. and Mitchell, O.S. (1999). Health problems as determinants of retirement: Are self-rated measures endogenous? *Journal of Health Economics*, 18(2):173 – 193.

Fields, G. (2003). Accounting for income inequality and its change : a new method with application to the distribution of earnings in united states. In Polachek S.W., editor, *Worker Well-Being and Public Policy*, pages 1–38. Elsevier Science Ltd.

Gradman T.J. (1994). Masculine identity from work to retirement. In Thompson Jr E.H., editor, *Older men's lives*, pages 104–121. Thousand Oaks, CA: Sage Publications.

Gruber, J. and Wise, D. (1998). Social security and retirement: An international comparison. *The American Economic Review*, 88(2):158–163.

Gustman, A.L. and Steinmeier, T.L. (2002). Social security, pensions and retirement behavior within the family. NBER Working Papers 8772, National Bureau of Economic Research, Inc.

Hanisch, K.A. and Hulin, C.L. (1991). General attitudes and organizational withdrawal: An evaluation of a causal model. *Journal of Vocational Behavior*, 39(1):110–128.

Hank, K. (2002). Effects of early life family events on women's late life labour market behaviour: An analysis of the relationship between childbearing and retirement in western germany. *European Sociological Review*, 20(3):189–198.

Henkens, K. (1999). Retirement intentions and spousal support: A multi-actor approach. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 54(2):S63.

Henkens, K. and Leenders, M. (2010). Burnout and older workers' intentions to retire. *International Journal of Manpower*, 31(3):306–321.

Henkens, K. and Tazelaar, F. (1997). Explaining retirement decisions of civil servants in the Netherlands. *Research on Aging*, 19(2):129–173.

Henkens, K. and Van Solinge, H. (2002). Spousal influences on the decision to retire. *International Journal of Sociology*, 32(2):55–74.

Hurd, M.D. (1988). The joint retirement decision of husbands and wives. NBER working papers 2803, National Bureau of Economic Research.

Hutchens, R. (1986). Delayed payment contracts and a firm's propensity to hire older workers. *Journal of Labor Economics*, 4(4):439–457.

Kim, S. and Feldman, D.C. (2000). Working in retirement: The antecedents of bridge employment and its consequences for quality of life in retirement. *The Academy of Management Journal*, 43(6):1195–1210.

Kosloski, K., Ekerdt, D., and DeViney, S. (2001). The role of job-related rewards in retirement planning. *Journal of Gerontology Series B : Psychological Sciences and Social Sciences*, 56(3):P160–169.

Lazear E.P. (1979). Why is there mandatory retirement? *Journal of Political Economy*, 87(6):1261.

Loretto, W. and White, P. (2006). Employers' attitudes, practices and policies towards older workers. *Human Resource Management Journal*, 16(3):313–330.

Manski, C.F. (2004). Measuring expectations. *Econometrica*, 72(5):1329–1376.

McGarry, K. (2004). Health and Retirement: Do Changes in Health Affect Retirement Expectations? *Journal of Human Resources*, 39(3):624–648.

Parsons, D.O. (1980). The decline in male labor force participation. *Journal of Political Economy*, 88(1):117–134.

Pienta A.M. and Hayward M.D. (2002). Who expects to continue working after age 62? the retirement plans of couples. *Journal of Gerontology Series B : Psychological Sciences and Social Sciences*, 57(4):S199–208.

Quinn, J.F., Burkhauser, R.V., and Myers, D.A. (1990). Passing the Torch: The Influence of Financial Incentives on Work and Retirement. *Kalamazoo, Mi: WE Upjohn Institute on Employment Research*.

Shultz, K.S. (2003). Bridge employment: Work after retirement. *Retirement: Reasons, processes, and results*, pages 214–241.

Shultz, K.S. and Wang, M. (2007). The influence of specific physical health conditions on retirement decisions. *The International Journal of Aging and Human Development*, 65(2):149–161.

Siegrist, J., Wahrendorf, M., von dem Knesebeck, O., Jurges, H., and Borsch-Supan, A. (2006). Quality of work, well-being, and intended early retirement of older employees–baseline results from the SHARE Study. *European Journal of Public Health*, 17(1):62–68.

Stock, J.H. and Wise, D.A. (1990). Pensions, the option value of work, and retirement. *Econometrica*, 58(5):1151–1180.

Szinovacz, M.E., DeViney, S., and Davey, A. (2001). Influences of Family Obligations and Relationships on Retirement. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 56(1):S20.

Talaga, J.A. and Beehr, T.A. (1995). Are There Gender Differences in Predicting Retirement Decisions?*. *Journal of Applied Psychology*, 80(1):16–28.

Taylor, M.A. and Shore, L.M.F. (1995). Predictors of Planned Retirement Age: An Application of Beehr's Model. *Psychology and Aging*, 10(1):76–83.

Taylor P. and Walker A. (1998). Employers and older workers : attitudes and employment practices. *Ageing and Society*, 18:641–659.

van Solinge, H. and Henkens, K. (2005). Couples' adjustment to retirement: a multi-actor panel study. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 60(1).

van Solinge, H. and Henkens, K. (2008). Adjustment to and satisfaction with retirement: two of a kind? *Psychology and aging*, 23(2):422–434.

von Bonsdorff, M.E., Shultz, K.S., Leskinen, E., and Tansky, J. (2009). The choice between retirement and bridge employment: a continuity theory and life course perspective. *The International Journal of Aging and Human Development*, 69(2):79–100.

Wang, M. (2007). Profiling retirees in the retirement transition and adjustment process: Examining the longitudinal change patterns of retirees' psychological well-being. *Journal of Applied Psychology*, 92(2):455–474.

Wang, M., Adams, G.A., Beehr, T.A., and Shultz, K.S. (2009). Career issues at the end of one's career: Bridge employment and retirement. In Baugh S.G. and Sullivan S.E., editors, *Maintaining Focus, Energy, and Options over the Life Span*, pages 135–162. Information Age Publishing, Charlotte, NC.

Wang, M., Zhan, Y., Liu, S., and Shultz, K.S. (2008). Antecedents of bridge employment: A longitudinal investigation. *Journal of Applied Psychology*, 93(4):818–830.