Antecedents and consequences of retirement planning and decision-making: A meta-analysis and model

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\begin{abstract}
In this study, meta-analytic procedures were used to examine the relationships between retirement planning, retirement decision and their antecedent and consequences. Our review of the literature generated 341 independent samples obtained from 99 primary studies with 188,222 participants. A small effect size (ES) for antecedents of retirement planning (poor health, negative working conditions and positive attitudes toward retirement) was obtained (ranging from $r = .05$ to $r = .19$), whereas a medium ES was obtained for work involvement and job satisfaction ($r = .31$ and $r = .34$). Regarding retirement decision, lower effect sizes were obtained. Effect sizes for the relationships with consequences were medium for retirement planning and bridge employment ($r = .28$), for retirement decision-volunteer work ($r = .26$), and for retirement decision-retirement satisfaction ($r = .26$). Structural equation analysis using the pooled correlation matrix allowed us to test a more complex model. Potential moderator variables were examined, and it was found that they explained only a small percentage of variability of primary studies. Results are discussed, and theoretical and empirical implications are suggested.
\end{abstract}

1. Introduction

The SHARE survey (The Survey of Health, Ageing, and Retirement in Europe) reveals that, in 2004, the number of retired people in Europe ranged from 34% of the participants in Spain to 66% in Austria (Brugiavini, 2005), and these numbers will probably increase as the baby boomers leave the job market and begin to enjoy their retirement. The economic activities and retirement decisions of people over 50 years old have been the subject of contemporary debate about the reforms of the pension systems in the European continent. However, although retirement does not seem to be a phenomenon that is restricted to industrialized countries, in many developing countries there is continuity in older people’s participation in the labor world, which is a sign that retirement has not been completely institutionalized (Szinovacz, 2003).

Retirement is a complex phenomenon that involves procedural aspects related to preparation for retirement and, at the same time, particular aspects linked to the decision to retire here and now. Although retirement is frequently seen as an abrupt switch from being employed one minute to total ceasing of work activity in the next minute, evidence suggests that it is a more complex and progressive transition (Pinquart & Schindler, 2007; Wang, 2007). However, there is an essential moment in the process of deciding to retire, which requires one to consider people’s freedom of action when deciding to retire, on the one hand, and, on the other, the push and pull factors that lead them to retire at a certain moment (Szinovacz, 2003).
A large number of primary studies have addressed the diverse factors related to both planning retirement as well as the decision to retire (i.e., Abel & Hayslip, 1986; Adams & Beehr, 1998; Adams & Rau, 2004; Alcover, Crego, & Martínez-Íñigo, 2007; Anderson & Weber, 1993; Austrom, Perkins, Damush, & Hendrie, 2003; Beehr, Glazer, Nielson, & Farmer, 2000; Blekesaune & Solheim, 2005; Butterworth et al., 2006; Buxton, Singleton, & Melzer, 2005; Charles, 1999; Chase, Eklund, & Pearson, 2003; Chiesa, 2007; Choi, 2001; Cron, Jackofsky, & Slocum, 1993; Debrard & Lengagne, 2007; Depolo, Guglielmi, & Simbula, 2007; DeVitt, Trevino, & Mollica, 1998; Dorfman, 2002; Dosman, Fast, Chapman, & Keating, 2006; Draper, Winfield, & Luscombe, 1997; Dunlop, Song, Lyons, Manheim, & Chang, 2003; Earl, 2004; Ekerdt & Deviney, 1993; Ekerdt, Hackney, Kosloski, & Deviney, 2001; Ekerdt, Kosloski, & Deviney, 2000; Elovaino et al., 2003; Evans, Ekerdt, & Bosse, 1985; Feldman & Kim, 2000; Fernandez, Mutran, Reitzes, & Sudha, 1988; Fletcher & Hanson, 1991; Fretz, Kluge, Ossana, & Jones, 1989; Gall, Evans, & Howard, 1997; Gee & Baillie, 1999; Gill et al., 2006; Gowans, 1998; Hanks, 1990; Hayward, Friedman, & Chen, 1998; Henkens, 1999; Henretta, Chan, & Rand, 1992; Hershey & Mowen, 2000; Honing, 1996; Hyde, Ferrie, Higgs, Mein, & Nazroo, 2004; Isaksson & Johansson, 2000, 2003; Johnson & Favreau, 2000; Kim, 1985; Kim & Devaney, 2005; Kim & Feldman, 2000; Kim & Moen, 2002; Kosloski, Ekerdt, & DeVaney, 2001; Kremer & Harpaz, 1982; Luchak, 1997; Lund, Iversen, & Poulsen, 2001; Lund & Vilkadsen, 2005; Martínez, Lozano, Valdés, & Candelas, 2003; Mein, Martikainen, Hemingway, Stansfeld, & Marmot, 2006; Mein et al., 2000; Morrow-Howell & Leon, 1988; Pransky, Benjamin, & Savageau, 2005; Reitzes, Mutran, & Fernandez, 1996a; Reitzes & Mutran, 2004; Richardson & Kilty, 1992; Shultz, Morton, & Weckerle, 1998; Siegrist, Wahrendorf, von dem Knesebeck, Jürges, & Börsch-Supan, 2006; Singh & Verma, 2003; Stetz & Beehr, 2000, Taskila-Abrandt, Puukala, Martikainen, Karjalainen, & Hietanen, 2005; Taylor & McFarlane, 1995; Theriault, 1994; Wallman, Burell, Kullman, & Svardsudd, 2004; Zaniboni, 2007), and up-to-date reviews of the literature have been conducted (Beehr & Adams, 2003; Wilson & Palha, 2007). Nevertheless, no quantitative review has been carried out nor has any meta-analysis been published to date. Therefore, given the importance of retirement in people’s lives (Rosenkoetter & Garris, 1998) and of the political decisions that retirement patterns of the population require (Beehr & Adams, 2003), in this work: (a) a meta-analysis of the antecedents and consequences of the experience of retirement was carried out; (b) the meta-analytical correlations were integrated to test a more complex model of the results of many empirical studies; and (c) the situational factors (both conceptual and methodological) that may moderate the relations of the antecedents and consequences with the experience of retirement were explored.

1.1. Retirement: Process and decision

It is not easy to provide a univocal definition of a multifaceted phenomenon like retirement. In fact, retirement can be seen as a process or an act (Beehr, 1986). There are a series of factors that lead people to think of retiring (planning or preference) and such preferences of plans have an impact on the decision to retire (retirement intention). As noted by Beehr & Adams (2003), “retirement is plural.”

The first theoretical perspectives analyzed the issue placing emphasis on only one facet—the retirement decision (hereafter, RD)—and they focused on the specific moment of leaving work. Thus, they underscored the loss of roles suffered by retirees and their negative effects on personal well-being, at the same time as the palliative effects of substitutive tasks such as volunteer work or caring for relatives (O’Brien, 1986). This viewpoint was challenged by the one provided by Atchley’s (1974) theory, which placed more emphasis on the continuity between the moments preceding and following retirement and accumulated favorable empirical evidence (Calasanti, 1996; Ekerdt, Vinick, & Bossé, 1989; Reitzes, Mutran, & Fernandez, 1996b).

Later on, the second facet—retirement planning (hereafter, RP)—was attended and the studies stressed the existence of many pathways leading to retirement. The concept of pathways emphasizes that RD implies a long-term sequential process within the life span (Settersten, 2003). This more complex viewpoint of retirement uses four key concepts to understand personal well-being after retirement: the relation of the process with the personal context, interdependence between the vital spheres involved in retirement, the importance of considering the moments within the process, and the existence of diverse pathways or possible trajectories.

Within Organizational Psychology, Beehr’s (1986) conceptualization of the process of retirement has made considerable impact. His model distinguishes various related facets: preference or RP and intention or RD, and lastly, the very act of retiring. Despite the fact that in his model, RP and RD are aspects that are doubtless related, there are theoretical reasons to assume that preferences or plans and decisions are not simply equivalent or exchangeable (Beehr, 1986). For example, some antecedents probably explain RP better than RD. In particular, if we take into account that RP—compared to switching jobs—is more accessible and more socially acceptable for older workers. In contrast, some antecedents probably explain RD better, as Beehr (1986) himself notes.

This viewpoint is coherent with the long theoretical tradition about judgment and decision-making, which notes that planning the action and the making the decision are two different processes. When a problematic situation is presented and the person should plan a course of action, they begin by identifying certain salient traits of the problem, recuperating relevant information from the memory and creating a meaningful organization of such information by developing a representation of the problem that serves to reduce uncertainty (Berkeley & Humphreys, 1982; Hastie, 2001; Pitz & Sachs, 1984). These cognitive operations are different from decision-making, although both of them are related. In order to make decisions, people analyze the costs and benefits, combine their desires or preferences and their expectations about the situation (Camerer, 1995; Luce, 2000; Savage, 1954; von Neumann & Morgenstern, 1947), or even avoid such analysis and base their decision on prudential rules that imply moral considerations and concerns about self-control (Prelec & Herrnstein, 1991). The complexity of these...
processes does not allow a fixed description of them (Mellers, Schwartz, & Cooke, 1998), but it is clear that theory has revealed the distinction between planning a course of action and making a specific decision about such a course of action.

Although Beehr’s model states that it is reasonable to expect that the influences on RP will be different from those on RD, when exploring the empirical research that this model generated, it is often noted that RP and RD have, to some extent, been dealt with as interchangeable concepts. This can be seen in the fact that, when the studies have operationalized retirement, they have sometimes assessed positive or negative feelings towards continuing to work, and at other times, plans to continue working. Likewise, they have measured attitudes towards retirement without establishing the appropriate distinctions (Barnes-Farrell, 2003). In the present review, in contrast, we followed Beehr’s (1986) conceptual distinction and examined RP and RD separately. A similar procedure was adopted in the only meta-analytical review, not published to date, about the antecedents of retirement (Shultz & Taylor, 2001) that uses planned retirement age for and retirement decision as criteria.

1.2. Antecedents of RP and RD

The diverse theories that explored the experience of retirement have progressively extended the range of antecedents. Specifically, pioneer theories indicate that situations of disruption and loss of roles are associated with deterioration of well-being, and this deterioration is more pronounced when the roles are very relevant for personal identity. So, they propose that people who are strongly involved and satisfied with their jobs will adjust worse after retirement.

The theory of continuity underlines that retirement is a process that starts before the act of retiring and that prior attitudes will have an impact on subsequent outcomes (Atchley, 1976; Pinquart & Schindler, 2007). Despite the existence of theoretical agreement about the predictive value of such antecedents, the empirical findings are not always consistent. Adams & Beehr (1998) mention a relation of \( r = -0.08 \) between work satisfaction and retirement intention, whereas Bidewell, Griffin, & Hesketh (2006) obtain a relation of \( r = -0.20 \). The relation between job involvement and RD is \( r = -0.27 \) according to Adams & Beehr (1998), whereas it is \( r = -0.13 \) according to Adams, Prescher, Beehr, & Lepisto (2002).

These inconsistencies suggest that this field of investigation would benefit from the administration of meta-analytical techniques. The more complex perspective from the theoretical viewpoint—the life span approach—which emphasizes the importance of personal circumstances and the interdependence of the spheres, does not propose specific operative hypotheses. However, other theories, such as those of control or of stress, could contribute antecedents. Specifically, the theory of control notes that situations of loss of control, such as poor health, would imply a decrease in personal well-being. Likewise, the theory of stress suggests that when one leaves a stressful role, such as adverse work conditions, one will experience relief associated with the change in the situation. Lastly, Beehr’s (1986) model indicated operatively some antecedents that could affect both the key aspects of his model, that is, RP and RD.

Although it seems obvious that to have poor health will induce one to plan and decide to retire, the results are not unanimous here either. Bahrami (2001) found a weight of \( \beta = 0.116 \) of the health status on RD, whereas Negrini (2007) found a relation of \( r = -0.23 \) between physical health symptoms and RP. With regard to negative work conditions, the results are also quite variable, as Bidewell and colleagues (2006) refer to a relation of \( r = 0.37 \) between negative conditions and RD, but Lim & Feldman (2003) only find a value of \( r = -0.11 \). Again, the inconsistencies indicate the appropriateness of applying meta-analytical techniques to these primary studies.

In an attempt to classify these predictors, in the present review, we selected three categories of antecedents of RP and RD: poor health, psychosocial factors (positive attitudes towards retirement, job satisfaction, and work involvement) and organizational factors (negative work conditions), partially following the suggestions of Shultz & Taylor (2001). Demographic factors, such as age or gender, were considered potential moderators that could explain the variability of the results.

Based on the literature reviewed, we proposed a first set of hypotheses for this meta-analysis. In general, regarding antecedents, we hypothesized that:

(a) Poor health, negative work conditions, and positive attitudes towards retirement are positively related both to RP and RD (Hypothesis 1).
(b) Job satisfaction and work involvement are negatively related both to RP and RD (Hypothesis 2).

1.3. Consequences of retirement

People’s adjustment to retirement has been a concern for social investigators. Although some theoretical models (i.e., Atchley, 1974, 1976) were formulated, empirical research is highly dispersed, and there are many partial studies focusing on the analysis of one or a few variables, which hinders generalization of their results. Despite this, there are many empirical studies of retirees’ well-being. The theoretical approaches that refer to role change associated with retirement also resort to these roles to explain subsequent adjustment. According to the continuity theory, the accessibility of alternative roles could be a desirable situation in retirement because it would reduce the negative impact on well-being (Atchley, 1989). So, RD may often be associated with searching for bridge employment or with the desire to become involved in volunteer activities. Such activities, to a certain extent a substitution of the work role, allow one to avoid the loss of social contacts and enhance maintaining personal well-being. Despite clear theoretical justifications, there are noticeable discrepancies in the empirical
results. Whereas Davis (2003) reports a relation of $r = -0.18$ between RD and participation in bridge employment, Kim & Feldman (1998) find a relation of $r = 0.18$ between the same variables.

The most direct indicator in research of well-being has been health after retirement and here, too, the results are not unanimous. Herzog, House, & Morgan (1991) find a weight of $\beta = -0.28$ of RD on physical illness, the studies of Gallo and collaborators find significant differences in mental health, physical functioning, alcohol consumption, and depression between retirees and workers (Gallo, Bradley, Siegel, & Kasl, 2000, 2001; Gallo et al., 2006).

When considering the broader results of retirement, most authors resort to life satisfaction or satisfaction with specific aspects of retirement (Floyd et al., 1992). Empirical research on the association between retirement and life satisfaction is contradictory (Pinquart & Schindler, 2007). Some studies (Herzog et al., 1991) mention significant regression coefficients of retirement on life satisfaction ($B = 0.26, p < 0.01$) whereas other studies (Schmitt, Coyle, Rauschenberger, & White, 1979) found no differences in retirees compared to people who continue to work ($M = 22.5$ and $M = 22.13$, for retirees and non-retirees, respectively), or others (Bell, 1978) even mention a significant decline in life satisfaction after retirement ($t = 3.06, p < 0.01$). More precise measures, such as satisfaction with retirement, do not provide more consistent results, because some studies (Desmette, Gaillard, & Lienard, 2004) find high levels of relationship between RD and subsequent satisfaction ($r = 0.33$), whereas other results (Topa, Moriano, Depolo, & Morales, 2007) are not so promising ($r = 0.06$).

In addition to the relations between antecedents and consequences through RP and RD, we must also be aware of direct relations among factors such as poor health experienced whilst working and illness or satisfaction after retirement, as has been repeatedly suggested (Beehr, 1986; Taylor & Doverspike, 2003).

The pattern of relations revealed in the literature is complex and there are many and sometimes inconsistent findings, so we consider the use of meta-analytical techniques promising for the review of this field of research.

Based on the literature reviewed, we proposed a second set of hypotheses for this meta-analysis. In general, regarding retirement consequences, we proposed that:

(a) RP is positively related to volunteer work, bridge employment, life satisfaction, and retirement satisfaction (Hypothesis 3).
(b) RP is negatively related to mental/physical illness (Hypothesis 4).
(c) RD is positively related to volunteer work, bridge employment, life satisfaction, and retirement satisfaction (Hypothesis 5).
(d) RD is negatively related to mental/physical illness (Hypothesis 6).

In an attempt to clarify this complex pattern of relationships between antecedents and consequences of RP and RD, in the first stage, we develop a theoretical model and, in the second stage, we perform a structural equation model (SEM) analysis to test all the relationships simultaneously using the pooled correlation matrix as input. However, we acknowledge that SEM cannot completely explain the complex causal relations between concepts and, therefore, longitudinal studies are needed to help clarify these causal relations and issues. The hypothesized model of relations of the antecedents and consequences is displayed in Fig. 1.

![Proposed hypotheses for MASEM](image-url)
1.4. Potential moderator variables

The most recent theoretical reviews note that there are many indications that the relations of retirement with its antecedents and consequences vary among social groups (Szinovacz, 2003). In his model, Beehr (1986) suggested diverse moderators, such as planning, retirement expectations, economic status, health, type A behavior, and type of job. Despite the fact that this wide range of variables would be optimal, unfortunately, the lack of information provided by primary studies does not allow us to include them in our moderator analyses. As a result, we followed Lipsey & Wilson’s (2001) suggestions for moderator variables. We first considered the substantive aspects of the studies. In this sense, we selected the characteristics of the people in the sample (workers or retirees), and age and gender as variables involved in the retirement phenomenon. Then, we took into account source descriptors, including the factors involved in the general study context, such as origin of the sample and year of publication. The rationale of this decision was that these variables are often proxies for substantive or methodological variables that might not otherwise be reported and included in the moderator analyses (Lipsey & Wilson, 2001, p. 83). Based on these recommendations, we considered a set of mediator variables that is listed below.

Firstly, it must be taken into account that retirement involves transition, which means that understanding the temporal process is crucial (Zickar & Gibby, 2003). This implies a series of methodological difficulties in the primary studies, which should be considered in the quantitative reviews. Many cross-sectional studies are based on the comparison of groups of older workers, near retirement, with other workers who have already retired. In this case, retirement for those who are still working is an expectation, a construct related to the future, whereas for the retirees, their job satisfaction or their previous poor health are retrospective. Therefore, it is reasonable to expect differences among the studies depending on the type of participants from whom the data was obtained (Pinquart & Schindler, 2007).

Secondly, there is a strong influence of social and normative factors on the phenomenon of retirement, and on its antecedents and consequences. Beehr & Adams (2003) report that whereas retirement is firmly established in industrialized countries, retirement patterns in rural areas or developing countries are very diverse. Even in developed countries, there is great diversity in the regulation of the complex phenomenon of retirement. For example, whereas in the United States of America, rules to have right to a disability pension are very demanding, but some European countries offer generous incentives for people with reduced capacity and specific programs for workers’ gradual retirement. Whereas in some regions of the European Union, continuity in part-time employment is seen as an indicator of well-being, in Asian countries, it is discouraged, although it may be economically necessary, because the social norms would blame the family that did not take proper care of the older person. This may be why empirical research has detected notable discrepancies among the results of studies from diverse countries, so the origin of the participants can be expected to be a potential moderator of variability among the studies (Hershey, Henkens, & Van Dalen, 2007).

Thirdly, age is always considered a good predictor of RD, and, at the same time, it is a demographic factor that interacts with the rest of the antecedents and consequences (Pinquart & Schindler, 2007). Despite unanimously at the theoretical level, the results show that sometimes retirement before the age of 65 is associated with less satisfaction (Palmore, Fillenbaum, & George, 1984) and, in some cases, retirees who are quite elderly are less satisfied (McGoldrick & Cooper, 1994).

Fourthly, the theories also admit that differences between men and women in the pattern of antecedents and consequences of retirement are to be expected, especially because of the impact of gender roles on couples’ retirement patterns (Szinovacz, 2003). If the husbands are still considered the main providers of family income, the patterns of retirement will be affected by this image, so that the women will either prefer to retire before their husbands, or else both partners will retire at the same time. But as the decision is also conditioned by economical factors, this can lead to retirement at different moments, which seems to wind up affecting well-being. However, empirical research on gender and retirement does not always reveal consistent results but instead diverse models have been verified of the relations between predictors and results as a function of gender (Calasanti, 1996; Quick & Moen, 1998).

Fifthly, some reviews have indicated that the time gone by since the empirical study was carried out could influence the explanation of the results. This could be due to diverse factors, some of a methodological nature, because the quality of empirical studies and the rigor in the presentation of the results may have increased over time. It could also be due to sociological factors, because retirement is a practice that has become consolidated in the last few decades in industrialized countries, so that the oldest studies might reflect results that contradict the more recent ones, at least, with regard to participants’ expectations. In this sense, the publication date of the study is proposed as a potential moderating variable of the results.

Based on literature review, we proposed a third set of hypotheses regarding potential moderator variables.

(a) RP in a sample of workers has a stronger relationship both with antecedents and consequences than RP in a sample of retirees (Hypothesis 7).
(b) RD in a sample of retirees has a stronger relationship with both antecedents and consequences than RD in a sample of workers (Hypothesis 8).
(c) RD has a stronger relationship both with antecedents and consequences among American than among European samples (Hypothesis 9).
(d) RD and RP relationships with antecedents and consequences are affected by participants’ age and gender, and year of publication of the study (Hypothesis 10).

2. Method

2.1. Literature search

Electronic searches of studies published up to 2007 were conducted through computerized databases (Psycinfo, Medline, ERIC, Academic Search Premier and Dissertation Abstracts), using retirement, retirees, retirement planning and retirement decision as keywords. We also performed a manual search of journals that regularly publish retirement research, such as International Journal of Aging & Human Development, Ageing and Society, Journal of Vocational Behavior, Journal of Gerontology, and Journal of Aging and Health. Finally, we contacted researchers by e-mail in order to obtain unpublished papers, and this procedure provided us with six studies (two raw data collections, three unpublished doctoral dissertations, and one manuscript submitted for publication). We accumulated 961 studies thorough this process. Examining their abstracts, we rejected those published in newspapers or in counseling-oriented magazines. Finally, we retrieved 601 studies in full text for further screening. We discarded 129 studies, as they were theoretical papers, 289 because they focused on other topics (e.g., financial planning, depressive symptomatology in later life), 26 studies centered on aging, 56 because the absence of r or of other statistics with which to calculate it, and two additional studies because their samples were used in another included study (Eden, Brokhøj, Ejlertsson, Leden, & Nordbeck, 1998; Kim, 2003).

2.2. Inclusion criteria

In order to be included in this meta-analysis, a study had to meet three criteria: (a) the study had to be an empirical research with a sample of retirees or aged workers (i.e., the works of Blau, 2000, and Chiu, Snape, Chan, & Redman, 2001, were excluded according to this criteria as they included younger workers); (b) the study had to provide measures of the relationships between RD or RP, on the one hand, and, on the other, one of their antecedents and consequences; and (c) a Pearson correlation coefficient or equivalent had to be included. A total of 99 empirical studies, written in English, French, Italian, and Spanish, was included in this meta-analysis, which provided 341 independent effect sizes (ES) with 188,222 participants.

2.3. Coding of studies

Five potential categorical and continuous moderating variables were coded: (a) methodological variables of the sample: type of participants (retirees, workers, or both), percentage of males, and mean age of participants; and (b) contextual variables: source of the study (North America, European Union, other) and year of publication or completion, if it was an unpublished study. The process was carried out by two independent evaluators who, after being trained in the procedure, analyzed 33% of the studies and reached an adequate level of agreement ($r = .87$). Discrepancies were resolved by reviewing the coding manual. In order to ensure independence of ES, we retained only one ES per sample, rejecting those that were based on the same data (i.e., Eden, Ejlertsson, & Petersson, 1999, and Eden et al., 1998), and considering measures taken in the first wave when the study was longitudinal (Bossé, Aldwin, Levenson, Siro, & Mroczek, 1993). If the same study design was carried out in multiple but independent samples (e.g., voluntary retirees vs. compulsory retirees, retirees vs. workers), we included their results as independent samples (Riddick & Stewart, 1994; Shultz et al., 1998).

2.4. Analyses strategy

The ES in this meta-analysis was $r$ (Pearson correlation coefficient). We included studies which report a wide range of ES values (i.e., independent group means and standard deviation, logistic regression, risk rates and hazard rates, among the most frequent) and used Comprehensive Meta-analysis 2.0 (Borenstein, Hedges, Higgins, & Rothstein, 2005), which allowed us to convert it to Fisher’s Z transformation of $r$. Standardized regression coefficients were also included, following the procedures suggested by Peterson & Brown (2005).

Empirical guidelines for interpreting the magnitude of ES were applied, according to the suggestion of Hemphill (2003), based on 380 meta-analytic studies. Considering that Cohen’s (1992) required value of $r = .50$ for a large ES occurs somewhat infrequently in applied research studies in psychology, we used criteria provided by Meyer et al. (2001) and Lipsey & Wilson (1993). This empirical guideline states that $r < .20$ should be considered low ES values, $r$ between .20 and .30 are medium ES values, and $r > .30$ are high ES values (Hemphill, 2003, p.78).

Besides the point estimates, we also report the 95% confidence interval. Homogeneity analyses were carried out with Q statistics (Hunter & Schmidt, 1990). Lastly, we analyzed the influence of moderator variables using a categorical model (AN-OVA analogous) and weighted regression analysis (random effects model). Our decision was based on the fact that, with a large number of studies, the data are more likely to have been drawn from heterogeneous populations. Thus, it will also be more likely to reject the homogeneity of correlation matrices (Cheung & Chan, 2005). We used the Z-score as a critical ratio (Hunter & Schmidt, 1990) when comparing the mean correlations of moderator categories. Due to the fact that the direction of the differences has not been theoretically specified, we conducted two-tailed Z-tests. Regarding publication bias, fail-safe $N$ values (Orwin, 1983) are provided in Table 1. We propose, therefore, that our meta-analyses are free of publication bias. They include unpublished research and achieve reasonable fail-safe $N$ values.
2.5. Meta-analytical structural equation models

The combination of meta-analysis with SEMs allows testing broader theoretical models based on the findings of multiple studies, following the procedures outlined by Viswesvaran & Ones (1995). We should not be too quick to discard any concern about the interpretative implications of data derived from very different samples, because the coherence of the modeled results might be questionable, as an anonymous reviewer suggested. Certainly, as Beehr (1986) stated, empirical research in this area has been dominated by a gerontological perspective. As a result, individual outcomes are more frequent among studies and some constructs are populated with a different type of sample (i.e., propensity to retirement with injured workers) than are studies of other constructs (i.e., psychosocial or organizational level factors, such as locus of control or pressure to retire).

However, as noted by Hansson, DeKoekkoek, Neece, & Patterson (1997, p. 221), “our knowledge of the retirement process emanates from a diverse set of research disciplines, and this broad approach to the study of retirement has been productive, but there is now a need for integration of findings and theoretical perspectives.” To summarize, the combined procedure of meta-analysis and SEM allows a more thorough and accurate test of models because both the sample sizes and the variety of predictor variables are much larger than could possibly be investigated in any single study, as Shultz & Taylor (2001) acknowledged.

In this study, the fit of a causal model of antecedents and consequences of RD and RP (see Fig. 1) was examined using a pooled correlation matrix. In order to obtain the pooled correlation matrix, we had to solve the missing cells problem. As Viswesvaran & Ones (1995) indicated, missing cells are a common problem, and we followed their suggestion through two steps. First, we performed separate meta-analyses using a subset of our primary studies to obtain 36 meta-analytic correlations. Then, we eliminated some antecedent or consequence variables from the matrix because no studies were found that assessed these pairs of variables (i.e., self-esteem-volunteer work). Finally, a pooled correlation matrix with a total of 25 off-diagonal cells was filled. We followed Viswesvaran & Ones’ (1995) recommendation to use the harmonic mean N = 206. The tested model presents five exogenous variables and six endogenous variables, and we used generalized least squares as estimation method to perform the SEM analyses. The fit of the model was assessed using chi square and the goodness-of-fit index (GFI), the adjusted goodness-of-fit index (AGFI), and the root mean residual (RMR), as recommended by Byrne (2001). To compare the models, we also used indexes such as the Akaike information criterion (AIC) and the Bayesian information criterion (BIC), which penalize the less parsimonious models. We used the procedure of re-specification of the model taking into account the critical ratios associated with the parameters and the modification indexes (MI) that indicated that changes in the model would improve its fit.

Table 1
Mean weighted effect sizes for each meta-analysis.

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<td>3.53 (1) n.a.</td>
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<tr>
<td>Positive attitudes toward retirement</td>
<td>5</td>
<td>1374</td>
<td>.19</td>
<td>-.09</td>
<td>.30</td>
<td>13.21 (4)**</td>
</tr>
<tr>
<td>Work involvement</td>
<td>4</td>
<td>4451</td>
<td>-.31</td>
<td>-.34</td>
<td>-.28</td>
<td>2.75 (3)</td>
</tr>
<tr>
<td>Job satisfaction</td>
<td>6</td>
<td>2126</td>
<td>-.34</td>
<td>-.99</td>
<td>.32</td>
<td>1196.87 (5)**</td>
</tr>
<tr>
<td>Consequences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge employment</td>
<td>2</td>
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<td>.28</td>
<td>-.20</td>
<td>.76</td>
<td>10.11 (1)** n.a.</td>
</tr>
<tr>
<td>Retirement satisfaction</td>
<td>3</td>
<td>431</td>
<td>.13</td>
<td>.03</td>
<td>.24</td>
<td>8.75 (2)**</td>
</tr>
<tr>
<td>Retirement decision</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Antecedents</td>
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</tr>
<tr>
<td>Poor health</td>
<td>34</td>
<td>26125</td>
<td>.14</td>
<td>.10</td>
<td>.17</td>
<td>741.19 (33)**</td>
</tr>
<tr>
<td>Negative work conditions</td>
<td>16</td>
<td>4585</td>
<td>.11</td>
<td>.07</td>
<td>.15</td>
<td>133.76 (15)**</td>
</tr>
<tr>
<td>Positive attitudes toward retirement</td>
<td>4</td>
<td>654</td>
<td>.17</td>
<td>.05</td>
<td>.29</td>
<td>7.08 (3)</td>
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<tr>
<td>Work involvement</td>
<td>18</td>
<td>14368</td>
<td>-.17</td>
<td>-.25</td>
<td>-.10</td>
<td>197.15 (17)**</td>
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<tr>
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<td>11</td>
<td>9764</td>
<td>-.02</td>
<td>-.09</td>
<td>.06</td>
<td>73.84 (10)**</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bridge employment</td>
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<td>.16</td>
<td>.08</td>
<td>.24</td>
<td>.547 (3)</td>
</tr>
<tr>
<td>Volunteer work</td>
<td>3</td>
<td>859</td>
<td>.26</td>
<td>.12</td>
<td>.40</td>
<td>16.86 (2)**</td>
</tr>
<tr>
<td>Retirement satisfaction</td>
<td>4</td>
<td>7832</td>
<td>.26</td>
<td>-.05</td>
<td>.57</td>
<td>70.59 (3)**</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>8</td>
<td>2244</td>
<td>.09</td>
<td>-.02</td>
<td>.21</td>
<td>79.29 (7)**</td>
</tr>
<tr>
<td>Mental/physical illness</td>
<td>26</td>
<td>43227</td>
<td>.02</td>
<td>-.07</td>
<td>.10</td>
<td>1462.56 (25)**</td>
</tr>
</tbody>
</table>

Notes: k, number of correlations; Ll, lower limit; Ul, upper limit.
** p < .05.
*** p < .01.
**** p < .001.
3. Results

3.1. Description of studies

Relating to date of publication, 8 of the primary studies were carried out between 1978 and 1988, 13 of them between 1989 and 1994, 32 between 1995 and 2000, and 46 between 2001 and 2007. Most of the research was conducted with American samples (60 studies), 25 with European samples, 6 with Australian participants, 5 with Canadian samples, 1 in Asia, and 1 in Israel. Participant categories were retirees (41 studies), workers (49 studies), and 5 studies used both of them. The mean age of the sample was 58.49 years (SD = 6.25).

3.2. Antecedents of retirement experiences: Mean ES

Table 1 shows the results of meta-analyses on antecedents of RP and RD. The first hypothesis was confirmed, showing that poor health, negative working conditions, and positive attitudes towards retirement were positively related both to RP and RD, despite the fact that most of the ESs reached were relatively small.

The meta-analytic results revealed small ESs for RP (mean $r = .05$, mean $r = .15$, mean $r = .19$, for poor health, negative working conditions, and positive attitudes, respectively) and for RD (mean $r = .14$, mean $r = .11$, mean $r = .17$, for poor health, negative working conditions, and positive attitudes, respectively), but all correlations were significantly different from zero.

As can be observed in Table 1, job involvement was found to be negatively related to RP ($r = -.31$) and RD ($r = -.17$), and job satisfaction was also negatively related to RP ($r = -.34$) and RD ($r = -.02$). Thus, the second hypothesis was supported.

Among the set of antecedent analyses, only the relationships with RP showed larger ESs. For job satisfaction-RD, however, the relationship was close to zero.

3.3. Consequences of RP and RD

The third hypothesis was that RP was positively related to volunteer work, bridge employment, retirement satisfaction, and life satisfaction. Only the relationships with bridge employment and retirement satisfaction were tested through meta-analysis because in the remaining cases, only one study that assessed outcome variables was located. Medium ES ($r = .28$) was reached for RP-bridge employment, whereas a small ES ($r = .13$) was obtained for RP-retirement satisfaction. These results allow us to state that our third hypothesis was supported. The fourth hypothesis has not yet been tested due to lack of sufficient information.

Regarding our fifth hypothesis, RD was found to be positively correlated to consequences, as hypothesized. Medium ESs were reached for RD-volunteer work ($r = .26$), and for RD-retirement satisfaction ($r = .26$). A small ES was obtained for RD-bridge employment ($r = .16$), whereas RD-life satisfaction showed the lowest ES ($r = .09$) within this set of analyses, as can be observed in Table 1.

As for mental/physical illness, contrary to our hypothesis, RD was positively correlated, despite the fact that the ES value was negligible ($r = .02$).

3.4. Model testing

Based on retirement theories, we proposed a broader model of antecedents and consequences of RP and RD, depicted in Fig. 1.

The pooled correlation matrix used as input for SEM is shown in Table 2. In spite of the fact that some cells were based on a reduced $k$, their pattern of relationships was quite similar to the pattern observed in the remaining variables.

The proposed model showed a limited fit to the data ($\chi^2(30) = 226.4$, CMIN/df = 7.6, GFI = .79, AGFI = .63, RMR = .02, AIC = 286.4, BIC = 386.2). According to the critical ratio values, the nonsignificant relationships were eliminated, and additional paths were added based on the MI. Specifically, direct relationships between antecedents and consequences of retirement were included. The final model showed better statistical fit ($\chi^2(40) = 59.71$, CMIN/df = 1.49, GFI = .98, AGFI = .87, RMR = .00, AIC = 139.7, BIC = 272.8). All the remaining paths reached statistical significance and their standardized estimates are presented in Fig. 2.

3.5. Potential moderator variables

The confidence interval was relatively broad and the Q statistic was significant for most of the outcome variables, indicating considerable heterogeneity across studies. Thus, we explored potential moderator variables using a categorical model (ANOVA analogous) and weighted regression analysis (random effects model). Unfortunately, only limited outcomes presented three or more studies in the categories to enable the comparison.

Many proposed analyses could not be completed due to limitations of the study data and those tested showed a complex pattern of results.
Table 2
Meta-analytic correlation matrix.

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
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<tbody>
<tr>
<td>1. Poor health</td>
<td>1</td>
<td></td>
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<td>2. Negative work conditions</td>
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<td></td>
</tr>
<tr>
<td>4. Work involvement</td>
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<td>.34</td>
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<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>5. Positive attitudes</td>
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<td>.16</td>
<td>.11</td>
<td>.15</td>
<td>1</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>6. Retirement decision</td>
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<td>.11</td>
<td>.02</td>
<td>.17</td>
<td>.17</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>7. Retirement Planning</td>
<td>.05</td>
<td>.15</td>
<td>.34</td>
<td>.31</td>
<td>.19</td>
<td>.35</td>
<td>1</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>8. Mental/Physical Illness</td>
<td>.30</td>
<td>.10</td>
<td>.05</td>
<td>.23</td>
<td>.16</td>
<td>.28</td>
<td>.12</td>
<td>1</td>
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<tr>
<td>9. Bridge employment</td>
<td>.14</td>
<td>.23</td>
<td>.09</td>
<td>.05</td>
<td>.23</td>
<td>.16</td>
<td>.28</td>
<td>.12</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Life satisfaction</td>
<td>.23</td>
<td>.10</td>
<td>.23</td>
<td>.10</td>
<td>.19</td>
<td>.09</td>
<td>.37</td>
<td>.25</td>
<td>.04</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>11. Retirement satisfaction</td>
<td>.14</td>
<td>.10</td>
<td>.07</td>
<td>.06</td>
<td>.40</td>
<td>.26</td>
<td>.13</td>
<td>.33</td>
<td>.04</td>
<td>.40</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: $n = 206$

Fig. 2. Standardized estimates for the final MASEM. Note: $N = 206$. 

Table 3
Weighted analysis of variance as a function of type of participants.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Qb (df)/Qw (df)</th>
<th>Z*</th>
<th>Effect size (LI/UI)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Retired</td>
</tr>
<tr>
<td>Antecedents</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Positive attitudes-retirement planning</td>
<td>11.32 (1)**/1.92 (3)</td>
<td>1.32</td>
<td>.03 (−.07/.13)</td>
</tr>
<tr>
<td>Job satisfaction-retirement planning</td>
<td>217.64 (1)**/8.45 (3)</td>
<td>−1.16</td>
<td>.90 (−.91/.89)</td>
</tr>
<tr>
<td>Work involvement-retirement decision</td>
<td>.04 (2)/196.1 (15)**</td>
<td>−4.27**</td>
<td>−.15 (−.32/.02)</td>
</tr>
<tr>
<td>Job satisfaction-retirement decision</td>
<td>2.23 (2)/65.9 (8)**</td>
<td>−.479</td>
<td>.04 (−.00/.06)</td>
</tr>
<tr>
<td>Negative work conditions-retirement decision</td>
<td>.79 (1)/123.0 (14)**</td>
<td>5.81**</td>
<td>.17 (.01/.31)</td>
</tr>
<tr>
<td>Poor health-retirement decision</td>
<td>1.99 (2)/722.18 (3)**</td>
<td>4.17**</td>
<td>.20 (.12/.23)</td>
</tr>
<tr>
<td>Consequences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement planning-retirement satisfaction</td>
<td>8.35 (1)**/4.4 (1)</td>
<td>1.74</td>
<td>.07 (.03/.12)</td>
</tr>
<tr>
<td>Retirement decision-volunteer work</td>
<td>.40 (1)/14.89 (1)**</td>
<td>3.37**</td>
<td>.34 (.05/.64)</td>
</tr>
<tr>
<td>Retirement decision-retirement satisfaction</td>
<td>6.59 (1)**/6.81 (3)</td>
<td>2.90**</td>
<td>.13 (.04/.22)</td>
</tr>
<tr>
<td>Retirement decision-life satisfaction</td>
<td>4.02 (1)<strong>/32.6 (5)</strong></td>
<td>−.43**</td>
<td>.13 (.03/.23)</td>
</tr>
<tr>
<td>Retirement decision-illness</td>
<td>2.43 (2)/1412.19 (23)**</td>
<td>.63</td>
<td>−.02 (−.14/.10)</td>
</tr>
</tbody>
</table>

* Z-test is two-tailed.
** p < .05.
*** p < .01.
**** p < .001.

Table 3 shows the results for the moderates tests of type of participants. Related to hypothesis seven, workers had a greater ES than retirees in the relationships between positive attitudes–RP (in antecedents) and RP–retirement satisfaction (in the consequences). For the eighth hypothesis, retirees had a greater ES in the relationship between negative working conditions–RD (ES = .17) and poor health–RD (ES = .20). For RD and consequences, retirees showed a larger ESs for volunteer work (ES = .34) and life satisfaction (ES = .13). Thus, the seventh and eighth hypotheses, related to moderator analyses, received only limited support.

Relating to origin of the sample, American participants showed greater ESs only for the relationships between job satisfaction–RP and RD-life satisfaction, but the difference was not statistically significant. Contrary to our hypothesis, and as can be seen in Table 4, European participants exhibited statistically larger ESs for the relationships between positive attitudes–RP (ES = .29), poor health–RD (ES = .21), negative work conditions–RD (ES = .12), and work involvement–RD (ES = −.24). In sum, the ninth hypothesis for moderator analyses was generally not supported.

As for quantitative variables, regression analysis showed significant association between mean age of the sample, percentage of males, and year of publication of the study. Table 5 shows the results for which the number of available studies allowed us to perform the regression analyses. Regarding RP antecedents, on the one hand, the ES was higher when there were more female participants for the meta-analyses of positive attitudes and job satisfaction. On the contrary, ES was higher when there were more males for the meta-analysis of job satisfaction and RP.

Regarding RD antecedents, the ES was higher when there were more male participants for the analysis of job satisfaction. In the analysis related to poor health–RD, the ES was lower for younger participants whereas it increased as a function of the year of publication. At the same time, negative work conditions–RD relationships were moderated by the percentage of females and age of the participants. On RD consequences, in the meta-analyses on RD-life satisfaction and RD-retirement sat-

Table 4
Weighted analysis of variance as a function of origin of the sample.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Qb (df)/Qw (df)</th>
<th>Z*</th>
<th>Effect size (LI/UI)</th>
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</thead>
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<td></td>
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<tr>
<td>Antecedents</td>
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<td></td>
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<tr>
<td>Positive attitudes-retirement planning</td>
<td>.57 (1)/11.27 (3)**</td>
<td>3.41***</td>
<td>.17 (.05/30)</td>
</tr>
<tr>
<td>Job satisfaction-retirement planning</td>
<td>.46 (1)/107.2 (4)**</td>
<td>−.99</td>
<td>−.57 (−.90/−.38)</td>
</tr>
<tr>
<td>Work involvement-retirement decision</td>
<td>1.71 (2)/165.02 (15)**</td>
<td>−.39**</td>
<td>−.13 (−.23/−.03)</td>
</tr>
<tr>
<td>Job satisfaction-retirement decision</td>
<td>1.52 (2)/52.11 (8)</td>
<td>−.50</td>
<td>−.02 (−.14/11)</td>
</tr>
<tr>
<td>Negative work conditions-retirement decision</td>
<td>5.32 (2)/115.41 (13)**</td>
<td>2.95**</td>
<td>.09 (.03/16)</td>
</tr>
<tr>
<td>Poor health-retirement decision</td>
<td>6.15 (2)/741.51 (30)**</td>
<td>3.05**</td>
<td>.09 (.03/15)</td>
</tr>
<tr>
<td>Consequences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retirement decision-life satisfaction</td>
<td>.05 (1)/76.8 (6)**</td>
<td>1.51</td>
<td>.10 (−.03/22)</td>
</tr>
<tr>
<td>Retirement decision-illness</td>
<td>5.11 (2)/1402.78 (23)**</td>
<td>.59</td>
<td>−.08 (−.19/05)</td>
</tr>
</tbody>
</table>

* Z-test is two-tailed.
** p < .05.
*** p < .01.
**** p < .001.

is satisfaction, ES was higher with a great amount of younger participants. In the analysis related to RD-illness, ES was higher in older participants and, at the same time, ES varied as a function of year of publication. The $R^2$ values obtained ranged from .003 for work involvement—RD to .99 for RD-life satisfaction. Despite this, in two analyses performed, the $Q_b$ values remain significant, showing that a certain amount of variability remained unexplained by the regression model.

4. Discussion

The main goal of this review was to synthesize the results of the empirical studies of antecedents and consequences of retirement and to test a more complex theoretical model from the pooled correlation matrix. In order to do this, firstly, we performed several separate meta-analyses of RP and RD on the one hand, and their antecedents and consequences, on the other. Secondly, we constructed a meta-analytical correlation matrix used as input to test the proposed SEM. Lastly, we attempted to provide some explanation of the variability of the studies from potential moderating variables. Taking the work of Shultz & Taylor (2001) as a starting point, we made a larger scale meta-analytic research on the topic.

Despite the limitations of this work, as we shall comment on below, we believe that the present review makes several contributions to research of retirement and its effects on people. Firstly, with regard to the antecedents of retirement, in the meta-analysis, we confirmed the pattern of relations predicted. So, the antecedents predict RP more precisely than RD. These results reinforce the fact that people in general perceive little control over RD, or, in other words, RD is, to a good extent, “forced.”

A more detailed examination shows that all the antecedents have closer relations with planning than with the final decision to retire, except for poor initial health. This finding confirms the data of the older qualitative reviews (Kasl, 1980; Minkler, 1981) and is coherent with the fact that deterioration of health before retirement can be a factor that reduces the possibilities of RP and, at the same time, precipitates RD. Certainly, as Szinovacz stated (2003), the relationship between health and retirement is complex. On the one hand, health problems can cause premature retirement as a consequence of long-term illness and can undermine retirees’ well-being. On the other hand, retirement from unhealthy jobs may promote early retirement and increased well-being for retirees. Moreover, a methodological problem could affect the meta-analytical results due to the fact that health problems can be viewed as consisting of three different levels, ranging from major physical illness to relatively mild psychosomatic illnesses, as Feldman (1994) stated. But, only overall measures of health are predominant in the studies included herein. As a result, we could not make a clear distinction of Feldman’s levels, and a clear understanding of the health-retirement relationship has not been provided.

Job satisfaction is the best predictor of RP (in a negative sense), confirming the results of a previous quantitative review (Shultz & Taylor, 2001). At the same time, job satisfaction was the worst predictor of RD, and this fact is noteworthy. This result may be affected by the compulsory nature of retirement age in many western societies, where RD could be due to a legal command rather than a real personal decision.

Secondly, with regard to the consequences, we could not test all the relations due to the lack of sufficient primary studies in some categories, but we found significant relations for RP-bridge employment, and RP-retirement satisfaction. In this sense, Taylor & Doverspike (2003) stated that planning eases the transition into retirement through two processes. First, RP allows the person to develop realistic expectations about retirement, and these expectations are more likely to be confirmed. Second,
RP may facilitate goal setting, such as engaging in bridge employment. Moreover, clarity of goals may improve specific financial planning in the long term which, in turn, may affect satisfaction, at least about the financial aspect of retired life.

Clearly, the most relevant consequences of RD were retirement satisfaction, volunteerism, and bridge employment. The other two relations that were meta-analyzed with RD, on the one hand, and with life satisfaction and illness, on the other, did not show relevant ESs. When the results are analyzed in detail, the strongest patterns of relations are verified between RP and bridge employment, and between RD and retirement satisfaction. Undoubtedly, the predisposition to think about and anticipate retirement is likely to lead older persons to engage in bridge employment more than if there is no reflection and no resources, and RD is produced abruptly or uncontrollably, for example, because of one’s own illness or that of one’s partner. In this sense, our results confirmed the findings of some excluded studies, based on large samples, which showed a strong pattern of the relations between quality of bridge employment and adjustment to retirement (Topa, Depolo, Moriano, & Morales, 2009).

In contrast, precisely because retirement is a process, the influence of RP on subsequent well-being also decreases over time and therefore, one could expect RD to have a stronger relation with retirement satisfaction than mere RP (Taylor & Doverspike, 2003). This is also verified by the results of the meta-analysis through the global ES of both aspects of retirement on satisfaction after retirement.

Thirdly, in order to test all the relations at once, in this study, we fit a SEM using the pooled correlation matrix as input. Despite the fact that some relations were based on a limited number of studies, this procedure allowed us to reach more essential conclusions than if it were based on the findings on a single empirical study. Some concerns have been expressed about their meaning, specifically in the sense that these models seemed to bear little resemblance to what was suggested by prior theory and instead may represent statistically derived models. In contrast, this model can be seen as a research tool, which allows us to discuss overall relationships between constructs and to achieve a better understanding of the retirement process. Therefore, we offer a briefly comment on its meaning.

First, we acknowledge that data fit has been mainly obtained by dropping and adding paths from the original model. Although final models should be always consistent primarily with theory, it is not uncommon that in meta-analysis, data do not allow a perfect fit. Taking into account that statistical fit can never be a substitute for theoretical soundness, our final model seems to be quite consistent with theory.

Second, the data show that the proposed antecedents really are related to the consequences, according to the hypothesized conceptual model. The data show, however, that some “specialized” paths emerged.

On the one hand, RP has primarily been predicted by specific job-related attitudes (e.g., job satisfaction and work involvement), whereas RD shows additional influence of poor health and negative working conditions, which, however, does not affect RP. In this sense, it would be interesting to consider that, even in the absence of previous RP, the factors that one could call hard (health, working conditions, wealth) could precipitate RD. Meanwhile, a medium-level covariance has been observed between RP and RD, which would suggest that retirement has been included as a step in a self-managed career. As Sterns & Kaplan (2003, p. 188) acknowledged, “Similar to work, retirement has moved into the realm of self-management.” Our contention is that, if the individual is in charge of his or her career, RD does not actually exist without some form of RP.

On the other hand, a similar “specialization” appears for consequences. RP appears to predict all the consequences except retirement satisfaction. In turn, RD shows the sole significant relationship with retirement satisfaction (besides the one with mental/physical illness). Moreover, when it was tested with SEM, RP showed a greater impact on consequences than did RD. This suggests that the increased focus on self-determination may lead individuals to perceive RP as a personal decision, whereas RD is seen as an imposition. Beyond this, up till now, there has been much debate about the pernicious influence of retirement on physical and mental health, which individual studies did not clarify. In our SEM, it seems clear that there is no close relationship between RD and subsequent illness, but instead, the lack of RP is a consistent and negative predictor of subsequent illness.

To summarize, the final model: (a) confirms the overall pattern between antecedents and consequences, showing some “specialized” role for RP and RD; (b) suggests the multifaceted nature of the RD process, which is influenced by a large number of variables, mainly related to the work context; (c) also suggests that consequences are more directly affected by RP than by RD. Although such a pattern should be tested by means of a longitudinal study (Beehr & Adams, 2003; Zickar & Gibby, 2003), it seems to show that planning and decision activities are far removed from being a structured and rationale process. Our data are not robust enough to allow a definitive model to be proposed. However, given the unavoidable limitations that are typical of meta-analysis, we believe that such a model can be used to confirm the centrality both of the planning and the decision processes in retirement, because RP and RD have been proven capable of describing and explaining a large part of the interwoven links between the antecedents and consequences of retirement.

Fourthly, the influence of the moderators was analyzed, but this analysis yields rather unclear results. On the one hand, although differences between the types of participants have been verified, the ESs found in each one of the categories do not follow the predicted pattern. This may be due to methodological reasons, because in diverse studies included in the review, the description of the participant sample is insufficient and, as a consequence, so is the categorization for the meta-analysis.

In this sense, we suggest that more methodological precision is needed when operationalizing the characteristics of the samples in the primary studies, because this contributes precision to the conclusions. As Barnell-Farrell (2003, p. 182) suggested, “retirement is a personal decision that has quite different ramifications for people from different generations, different gender role sets, different cultures, and different socioeconomic contexts.” Despite our efforts, more research in this direction is needed.
This result also seems to confirm the warning of Pinquart & Schindler (2007) about the possible interference of third variables in the relations between RD and subsequent results. Moreover, it should be remembered that retired people are not a homogeneous group and some of the characteristics that differentiate them, such as how long they have been retired, should be taken into account when planning group comparisons. This might explain the inconsistency of the patterns of differences between retirees and workers that are found in the analysis of moderators in this review.

Despite the methodological issue of the sample comparisons, it should also be taken into account that retirement is not the same when it is proposed to people who are still working as to those who are already retired. In the former case, expectations and perceptions of the future are being investigated, whereas in the latter, we are referring to memories and retrospective perceptions, on which subsequent experiences have had an impact, which can bias such memories negatively or positively. Another explanation for this methodological problem is that people for whom retirement is further away view it as a response to job conditions. On the contrary, people who are close to retirement “envision retirement primarily in terms of desirability/undesirability of the new role,” as Barnell-Farrell (2003, p. 173) noted. In any case, the utility of making simple comparisons between employees and retirees is questionable.

In contrast, there is no consistent pattern of results for the origin of the sample. Once again, the differences are statistically significant form some analyses but the ESs do not follow the pattern predicted. This may be due, on the one hand, to the existence of diverse factors observed in the same society at different temporal moments, such as the normative variations regarding the expected retirement age. For example, at a time of economic bonanza, older people may be encouraged to remain employed, whereas in times of high unemployment, they may be considered to be depriving the youth of work. Thus, within the same category, the variability of the results could even be due to the time at which the study was carried out.

However, the categories are very heterogeneous because the social and pension systems are not uniform, either in the formal or in the informal aspects, not even in the European Union. There are even differences between professional groups in the same country or between the public and the private sectors, which adds still more heterogeneity. This could also be considered an example of social factors indirectly affecting subsequent well-being, through beliefs about the appropriate retirement age and the discrimination of older employees, which affects the moment of RD and subsequent well-being. Finally, some of the conflicting findings regarding this moderator analysis may be a function of the inadequate attention that has been paid to a valid cross-cultural definition of retirement, specifically when the purpose is to specify its occurrence in non-Western, non-industrial societies (Luborsky & LeBlanc, 2003). As a result, the studies that included participants from non-Western societies should be not compared to those of Western societies without considering these methodological issues.

In the fifth place, we tested a regression model in which three continuous variables, age, sex, and the year of publication or of conducting the study were used as moderators. In this case, the results yielded a pattern that follows the prediction, as sex, taken alone or with other variables, explained an important percentage of the variability in the studies of various cases. In some analyses, in contrast, the most powerful predictor of variability was the year of publication. These results provide meta-analytical support to the statements from diverse models, both psychosocial and economical, which refer to many reasons for sex to have an impact on subsequent adjustment to retirement. The differentiated social roles of men and women lead the latter to a discontinuous work trajectory, where factors such as the need to care for elderly relatives, their partner, or grandchildren affect their decision to retire. In turn, the impact of gender on subsequent adjustment may be mediated by women’s ease to develop work activities (bridge employment or volunteering) simultaneously with domestic responsibilities, taking into account their greater experience in the management of simultaneous work and domestic responsibilities. Moreover, the impact of discontinuous and shorter working careers may be noticeable in a specific feature of retirement satisfaction, economic income, because it is a proven fact that women’s pensions are lower than men’s. This outcome is consistent with the statement that gender differences are revealed “in the extent to which retirement decisions are primarily driven by the pull influence of opportunities to carry out the family role responsibilities versus the push influences of negative affect toward job and the organization” (Barnes-Farrell, 2003, p. 173).

Lastly, the explanatory weight of the year of publication of the study may be concealing other methodological variables, such as the quality of the investigation reported, or the percentage of working women in the sample. It is reasonable to assume that, if the study is older, the percentage of female participants who had been in the labor market for a long time would be lower. It is also to be expected that, due the progressive implementation of the pension systems, especially in developing countries, participants’ expectations and plans as reported in the studies carried out during the decade of the 1970s will be different from the contemporary ones. As the results are not completely clear, it is advisable to continue to explore in this direction. It would also be appropriate to add to this regression equation other variables we could not categorize from the primary studies, such as previous occupational level, the kind of work carried out, or job tenure in the organization. As in the previous unpublished meta-analysis of Shultz & Taylor (2001), the hypotheses about these moderators could not be tested. Once again, we recommend authors of the primary studies to provide exhaustive information about these variables in their original works.

5. Limitations

As mentioned above, this study has several limitations. One of the most important difficulties was that, despite the popularity of studies on retirement, only a small number of empirical works test each one of the relations between variables, perhaps due to the reduced range of theoretical frameworks on which the primary studies are based. Moreover, most of them
used only the retirees' or older workers' perceptions as source of information, without collecting other data from supervisors, coworkers, or relatives, without the possibility to distinguish personal perceptions from more objective retirement conditions.

The second limitation is that we could not test all the variables using SEM. Combining meta-analytic procedures with SEM proved to be a difficult task, given the large quantity of missing data in the final correlation matrix. To avoid this problem in the future, primary studies should report the correlation matrix of all variables. At the same time, the percentage of variance explained in the criterion variables included in the SEM model ranges between .32 and .07, which shows that the primary investigations have contributed results that improve our understanding of some stages of the retirement process more than other stages. In this sense, income measures have been excluded from this review due to the fact that a broad range of indicators of finances were included in primary studies. As Taylor and Geldhauser stated (2007, p. 31) “matching subjective financial predictors with affective dependent variables and more objective indices of finances with objective dependent variables may be one way of improving our understanding of the role of finances in psychological and financial well being”.

Related to this point is another limitation. As we recognized above, SEM cannot completely explain causal relations between concepts. As a result, there may be reciprocal relations that the tested model did not contemplate. For example, life satisfaction may affect RP and RD even before the concrete action of retiring. Longitudinal studies are required to help clarify these patterns of causal relations.

The fourth limitation is due to the fact that we could only apply the analysis of potential moderators to a limited number of relations, due to lack of primary studies in the diverse categories. This has limited the conclusions that can be reached from these analyses and has made the moderating effects even more confusing. This again leads to emphasizing the importance of future research on RP and RD.

A related limitation is that this meta-analysis includes primary studies falling into the “others” category with regard to the origin of the sample. The confusion within this category is caused by the difficulty to distinguish among different situations, which hinders the comparison of retirement in contemporary Western nations with retirement-like practices from a range of non-Western cultures.

Some concerns about the availability of meta-analytical results have been mentioned and we will refer to those that could affect our conclusions. On the one hand, primary studies sometimes have authors in common, which implies some threat to independence. On the other hand, another limitation of these studies stems from the fact that predictor and criterion variables have been measured in the original studies with different instruments, jeopardizing the comparability of definitive results. Standardization of the measures of RP, RD, retirement satisfaction, work involvement and other organizational and personal outcomes seems very advisable.

Finally, it is also useful to keep in mind that our conceptual distinction between RP and RD is rather simplistic and does not allow us to explore in detail some related issues such as active versus passive involvement in planning. A thorough examination of how different forms of planning impact on behavior is needed, and this is more important for older, low-income workers, specifically women and ethnic minorities (Taylor & Geldhauser, 2007), due to the fact that these groups have not been engaged in managing their financial resources previous to retirement.

5.1. Practical implications and future research

The goal of a meta-analytical review is not only to summarize and synthesize the state of an issue with quantitative procedures. It also has the goal of providing recommendations to guide future research.

Firstly, with regard to the antecedents of RP and RD, specifically in health, more precise categorization of this variable in the primary studies must be made. Following the recommendations of Feldman (1994), three levels of inadequate health can have an impact on retirement, but in this review, we did not find enough information in the primary studies to maintain this categorization. In this sense, we recommend investigators that the operationalization of health measures should be made through detailed categories and not only by means of a global measurement, which leads to a loss of relevant information. With reference to health levels, measures of the categories of gender-related health should also be considered, both of the specific worker and his or her partner. The important social changes in gender roles over the last 15 years may have modified the conclusions of the investigations carried out in the last decades of the 20th century (Hansson et al., 1997; Talaga & Beehr, 1995), according to which, men had a lower tendency to retire if their wives' health was poor, in order to guarantee the necessary income, and, inversely, women tended to retire more if their husbands had poor health, because they had to take care of them.

Secondly, we recommend investigators to extend the range of empirical results included in the studies. In this review, we did not locate enough studies to enable us to analyze the influences of planning on all the consequences. This prevents testing the hypotheses that state that personal well-being is affected by planning in the sense that it facilitates the transition towards retirement, helping people to develop adequate expectations and set new goals (Taylor & Doverspike, 2003). As a suggestion for future works, we therefore recommend including the variables that account for the process by which certain antecedents affect the results within the theoretical models to be tested by original studies.

Thirdly, regarding operationalization of the variables included in the primary studies, we also have some comments. Our recommendation for future research is to operationalize with care the diverse measures and not to assume that perceptions prior to and after retirement are comparable, not even when referring to the same person. Even when applying longitudinal
designs to the study of change, it is recommendable to consider the suggestions about the different types of change (Millsap & Hartog, 1988).

Fourthly, taking into account the influence of personal characteristics in RP and RD, we recommend future research to describe more precisely the sociodemographic characteristics of the participant samples, because the absence of these data in the primary documents often precludes more precise analyses later on.

Fifth, an area of future research of great interest may be the study of the links between career-related variables, RP and RD, and the consequences of retirement. If Adams (1999) extended the model of Beehr (1986) upon finding that career commitment and occupational goal attainment played a central role in RP and RD, a new extension of the model analyzed could now be explored, as well as the possible consequences as a function of these occupational and career variables.

With regard to this, a recent study has confirmed that age is neither the only nor the most important factor that affects decisions at the end of one’s career. Thus, Grellet and Richtermeyer (2006) have confirmed that social support can be more important, because one’s expectations about developing one’s career, training, or maintaining professional contacts and the perception of organizational support, along with family support, can have a higher impact than the social norm of age in the decision to continue work activity.

These results could be very useful for practitioners and career/vocational counselors, and would allow them to influence older workers’ processes of planning and decision-making. In recent years, governments of developed countries have begun to draw attention to the importance of retaining older workers who reach retirement age, both because of their knowledge and their untransferable experience, which would be lost if they retire, and to maintain the volume of active working population that pays for social security. For example, organizations that wish to retain older workers could design programs aimed at increasing career commitment and establishing new professional goals because, along with personal and work-related variables, this affects RP and RD conjointly (Adams, 1999). Thus, what Hall and Mirvis (1995) called a new kind of “career contract” between employers and older workers would be up-dated and redefined, aimed at retaining them in the organization.

Vocational interests seem to be very stable throughout life (Low, Yoon, Roberts, & Rounds, 2005), so age does not seem to decrease their motivating nature, but instead the lack of new career goals in the organizations and contexts that would motivate older workers to maintain and stimulate their vocational interests. Organizational policies and practices aimed in this direction can affect RP and RD. Maintaining family support, although it is more difficult for the organizations to manage this, can be very useful for long-term human resources development, and to extend the sphere of work-family balance (Grellet & Stroh, 2002).

Lastly, future research should not only consider the influence of individual factors, but also the important role that cultural differences can play in the disposition to retire, older workers’ RP and RD (Hershey et al., 2007), and research carried out from a cross-cultural perspective should be encouraged.

Summing up, the global results of this meta-analysis support the important role of RP and RD in retirees’ personal well-being, as well as the importance of studying this issue in more detail.

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References (studies marked with asterisk have been included into meta-analyses)


