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**Managers' Interview Decisions about Older Job Applicants: Effects of Human Capital-Related Characteristics, General Economic Conditions, and Changes in Job Demands**

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**Abstract**

Older job applicants are vulnerable to stereotype related bias in the recruitment process. In the current study, we examined how managers' job interview invitation decisions regarding older job applicants are influenced by applicants' human capital-related characteristics, general economic conditions and managers' experiences of changes in job demands. Data were collected with two waves of a vignette experiment, three years apart, among a sample of 211 Dutch managers from various organisations. Multilevel analysis showed that managers were more likely to invite older job applicants who had matching qualifications, were employed at the time of application, and came with recommendations. In addition, managers' propensity to invite older job applicants was higher in better economic conditions. The effects of recommendations were moderated by the general economic conditions and changes in job demands, such that a recommendation from another employer was especially influential in bad economic conditions, while a recommendation from an internal employee was especially influential when job demands had increased. The results emphasize the importance of considering the organisational and economic context in understanding the recruitment of older workers. The findings also suggest that older workers, employers, and policy makers should invest in older workers' human capital to protect their employability.

*Keywords:* older workers, recruitment, personnel selection, hiring, human capital, general economic conditions, job demands

## **Managers' Interview Decisions about Older Job Applicants: Effects of Human Capital-Related Characteristics, General Economic Conditions, and Changes in Job Demands**

### **Introduction**

Demographic changes in recent decades, most prominently declining birth rates and increased longevity, have led to changes in the age structure of the workforce, with more older workers (aged 50+) than ever before (Wheaton & Crimmins, 2013). In addition, due to changes in retirement legislation in many countries, older workers cannot afford to retire as early as they had been in the past couple decades, which has resulted in increasing numbers of older workers looking for prolonged employment (D'Addio, Keese, & Whitehouse, 2010). However, older workers' opportunities for prolonged employment can be obstructed by their poor labour market position. For example, reemployment after job loss is negatively related to workers' age, especially after the age of 50 (Wanberg, Kanfer, Hamann, & Zhang, 2015), leading to longer unemployment durations among older workers than among younger workers (Chan & Stevens, 2001). This is related to the finding that many organisations employ older workers, but do not hire them (i.e., they hire workers at younger ages and employ them into their 50s and beyond, but rarely hire older workers out of the labour market; Adler & Hilber, 2009; Daniel & Heywood, 2007).

One strand of the literature suggests that the poor labour market position of older workers is the result of age discrimination. Studies have shown that older workers consistently receive more negative evaluations than otherwise equivalent younger workers in different employment contexts, such as internal evaluations (Rosen & Jerdee, 1976; Gordon, Rozelle, & Baxter, 1988; Lee & Clemons, 1985) and personnel selection for hiring (Bendick, Brown, & Wall, 1999;

Lahey, 2008; Ahmed, Andersson, & Hammarstedt, 2012). The main argument is that many employers, recruiters, and managers hold predominantly negative stereotypical views of older workers and older job applicants, such as older workers having a lower willingness and ability to engage in learning and to work with new technologies, and being overall less productive than younger workers (Bal, Reiss, Rudolph, & Baltes, 2011; Ng & Feldman, 2012; Posthuma & Campion, 2009; Van Dalen, Henkens, & Schippers, 2010), and are therefore more likely to evaluate an older worker or job applicant negatively than a younger worker or job applicant (Büsch, Dahl, & Dittrich, 2009; Finkelstein, Burke, & Raju, 1995; Roscigno, Mong, Byron, & Tester, 2007). However, these studies focus explicitly on age, comparing older workers to younger workers, and thereby largely ignore other factors that may influence older workers' job search outcomes. For example, it is not clear what distinguishes older workers from one another in the eyes of hiring managers. In addition, as Landy (2008) argues, many of these studies lack external validity as a result of their use of student samples and unrealistic evaluation experiments that are not generalizable to real world situations.

Managers' evaluation of job applications and their subsequent decision whether or not to invite a job applicant to an interview is one of the few cases that is comparable in an experimental setting and in the real world (Landy, 2008). Screening of job applications is one of the main methods of personnel selection that organisations use for virtually all jobs (Cole, Feild, & Giles, 2003; Schmidt & Zimmerman, 2004). In addition, it is a phase where job applicants and managers usually have not had any personal interaction, which makes the decision prone to stereotype-related bias (Derous, Ryan, & Serlie, 2015; Landy, 2008). Research on the effects of résumé contents on managers' hiring recommendations suggests that human capital plays an important role: résumé contents such as academic achievement and work experience are related

to managers' inferences about the productivity of the job applicant and how well the job applicant may fit the job and the organisation (Chen, Huang, & Lee, 2011; Cole, Rubin, Feild, & Giles, 2007; Tsai, Chi, Huang, & Hsu, 2011). However, within this literature, little attention has been paid to job applicants who may suffer from stereotypical bias about their productivity, such as older job applicants, and it is therefore unclear to what extent human capital-related factors may influence employment outcomes for such groups. In addition, there is a need for a better understanding of boundary conditions that may alter the relationship between résumé contents and the interview invitation decision of managers (Tsai et al., 2011). In particular, economic and organisational contexts have been suggested to shape the effects of human resource management practices (Jackson & Schuler, 1995; Kim & Ployhart, 2014).

Therefore, the purpose of the current study is to examine managers' interview invitation decision with regard to older job applicants. In particular, taking a human capital perspective, we investigate how managers' interview invitation decision depends on older job applicants' human capital related characteristics. In addition, we test the external economic conditions (before vs. after European debt crisis), and managers' organisation-specific experience of changes in job demands as potential moderators on the effects of applicants' human capital-related characteristics. To do so, we analyzed data from two waves of a vignette experiment among Dutch managers from various organisations. The data were collected in 2010 (before the European debt crisis) and 2013 (after the European debt crisis). Between these years, the Dutch economy went through a persistent recession, which was part of the broader Great Recession and the European debt crisis (OECD, 2014). This is evidenced by the increase in the unemployment rate from 5.6% in the second quarter of 2010 to 8.3% in the second quarter of 2013, while economic growth declined from 1.8% to -1.2%, and government debt increased from 59% to

68.5% of the gross domestic product (Statistics Netherlands). The study was repeated in 2013 with the same sample to create a natural experiment that allows us to study the changes in managers' evaluations of older job applicants in a period of economic recession, and contributes to a better understanding of the effects of recessions on human resource related practices (Latham & Braun, 2011).

The current study makes three important contributions to the literature. First, it is among the first to specifically study the effects of older job applicants' human capital-related characteristics on managers' interview invitation decisions, which is empirically relevant in a labour market with a significantly increasing portion of older workers. Second, we rely on the timing of our measurement to create a natural experiment, which allows us to study whether managers' assessment of older job applicants changed under different general economic conditions. This also provides a unique opportunity to study the general economic context as a potential boundary condition of micro-level hiring decision-making among managers. Third, we study whether the change in the organisation-specific experience of the manager, specifically the change in job demands, influences the weight that managers attach to different human capital related characteristics in their interview invitation selection decision regarding older job applicants. This way, we recognize the importance of the organisational context in which the manager operates, and advance the understanding of how organisational context may moderate the relationship between older job applicants' human capital-related characteristics and managers' interview invitation decision.

## **Theoretical Framework and Hypotheses**

### *Older Job Applicants' Human Capital-Related Characteristics and Managers' Interview Invitation Decisions*

The screening of job applicants' résumés is often one of the first steps in the personnel selection process (Cole et al., 2003; Schmidt & Zimmerman, 2004). Because interviewing and other selection methods such as testing are costly, résumé evaluation is used as an inexpensive initial screening tool to determine whether job applicants have the characteristics that warrant further evaluation (Cole, Feild, Giles, & Harris, 2009). The relationship between résumé contents and hiring recommendations has been well established empirically, and has been shown to be mediated by factors such as recruiters' evaluations of applicants' job competencies (Huang, Chen, & Lai, 2013; Chen et al., 2011) and person-job and person-organisation fit (Kristof-Brown, 2000; Tsai et al., 2011).

The human capital perspective and signaling theory can be applied to understand the relationship between job applicants' characteristics and hiring recommendations. Specifically, job applicants' characteristics, such as summarized in a résumé or for example learned through recommendations, generate managers' inferences about the applicants' personality (Cole et al., 2009) and work-related knowledge, skills and attributes (Chen et al., 2011). Through these inferences, managers will form predictions about the applicant's suitability and performance for the job position, as well as the applicant's fit within the broader context of the organisation (Cable & Judge, 1997; Cole et al., 2007; Edwards, 1991; Tsai et al., 2011). In other words, managers use the human capital-related characteristics of the job applicant to form evaluations about the potential productivity of the job applicant (Becker, 1975; Thurow, 1975). Furthermore, because the information in a résumé is limited and the predictions about a job applicant's

productivity are therefore inherently uncertain, managers may draw further inferences about the job applicant based on signals that are provided in the job application process (Bangerter, Roulin, & König, 2012; Protsch & Solga, 2015; Spence, 1973). For example, long unemployment spells or a large number of different employers over the career of an older worker may signal an applicant's lack of loyalty or an inability to perform up to expectations (Bills, 1990). Even though such inferences may be unjustified or incorrect, they matter because they influence managers' decisions whether or not to invite the job applicant for a job interview (Cole et al., 2009).

A job applicant's *qualifications* are central to the managers' inferences about the applicant (Brown & Campion, 1994). Qualifications encompass skills, knowledge, abilities, education, and experience that are useful for the ability to perform in a job (Erdogan, Bauer, Peiró, & Truxillo, 2011). When a manager perceives a lack of qualifications on the part of the job applicant, in other words when the job applicant is underqualified, the manager is likely to infer a lack of person-job fit, which would lead to a lower likelihood to invite the job applicant to a job interview for further evaluation (Tsai et al., 2011). Overqualification, in other words when the job applicant possesses qualifications that exceed job requirements (Erdogan et al., 2011), is also expected to lead to a lower likelihood of the manager to invite the job applicant for a job interview. This is because managers may find overqualified personnel harder to motivate and fear such employees may leave when a job better suited to their qualifications becomes available (Martinez, Lengnick-Hall, & Kulkarni, 2014; Wald, 2005).

*H1: Managers are less likely to invite job applicants who are (a) overqualified or (b) underqualified to a job interview than those whose qualifications meet the job requirements.*

As mentioned earlier, managers may interpret signals provided in the application to make inferences about job applicants' human capital (Bills, 1990; Protsch & Solga, 2015; Spence, 1973). Such inferences may lead to discrimination when individuals are judged based on the generalized characteristics of the group they belong to (Akerlof, 1970; Thurow, 1975). One particularly important signal in this respect is the job applicant's *employment status* (Bills, 1990; Lockwood, 1991). More specifically, older job applicants who are unemployed at the time of application may be perceived by managers to be less competent and have lower human capital than older job applicants who are employed elsewhere at the time of application (Karren & Sherman, 2012; Lockwood, 1991). Even though the reason for unemployment may not be observable from the job application, the notion that some may be unemployed due to a lack of human capital may create a 'lemon car effect' (Akerlof, 1970), and thereby tarnish all job applications from unemployed job applicants (Karren & Sherman, 2012).

*H2: Managers are more likely to invite job applicants who are employed elsewhere to a job interview than those who are unemployed.*

Furthermore, managers may base their inferences of job applicants' human capital and expected productivity on *recommendations* from relevant sources. Letters of recommendation are regularly used in the personnel selection process, predominantly because they may include information about past performance and personality traits that may signal a good person-job fit (Muchinsky, 1979). However, a common problem is that letters of recommendation include solely positive traits of job applicants, and are considered nondiscriminative and nondifferentiating by managers (e.g., Baxter, Brock, Hill, & Rozelle, 1981). This may be different when the recommendation for a job applicant comes from a source that is well known

by the manager and perceived as trustworthy, as these sources put their reputation at stake by making a recommendation for a specific job applicant (Marsden & Gorman, 2001). In other words, a recommendation from a trustworthy source for a particular job applicant may increase the manager's perception of that applicant's suitability for the job. Two possible trustworthy sources are current employees of the organisation, who may be able to judge first-hand whether the job applicant they recommend possesses the necessary human capital for a satisfactory performance, or fellow employers or managers that the recruiting manager deems trustworthy, as they are involved in personnel selection themselves and are better able to judge the organisation's needs.

*H3: Managers are more likely to invite job applicants who are recommended by (a) a current employee of the organisation or (b) a trustworthy fellow employer to a job interview than those who do not have such recommendations.*

#### *Boundary Conditions of the Effects of Human Capital-Related Characteristics*

The *general economic conditions* in which an organisation operates has wide-ranging implications for organisations' human resource practices and operations (Robie, Emmons, Tuzinski, & Kantrowitz, 2011; Jackson & Schuler, 1995). For example, Kim and Ployhart (2014) showed that organisations that diversified their staffing and training practices before, during, and after the Great Recession were more productive and profitable in the long run. However, whether and how an economic recession influences the personnel selection process of organisations has received little attention. In the current study, we follow Kim and Ployhart (2014) by studying the effects of a change in the general economic conditions in a two-wave design. By comparing data from two time points, between which the economy was in recession, we are able to investigate

how the general economic conditions affects managers' evaluation of older job applicants. Specifically, we investigate both a direct effect of the general economic conditions on managers' interview invitation decision for older job applicants, and a moderation effect of the general economic conditions on the effect of older job applicants' human capital-related characteristics.

First, the general economic conditions are expected to directly affect managers' evaluations of older job applicants through a labour supply effect. In an economic recession, unemployment rises and the supply of labour increases. In other words, there will be a larger number of job applicants for the same number of job openings. There is little reason to believe the number of job applicants invited for an interview changes as the number of job applicants change (Robie et al., 2011), which implies that when the supply of labour increases, any single job applicant is less likely to be invited for an interview. Conversely, when economic conditions are comparatively better, there will be fewer job applicants, and job applicants are more likely to be invited for an interview.

*H4: Managers are more likely to invite older job applicants to a job interview when the general economic conditions are better than when they are worse.*

Further, we expect a moderation effect of the general economic conditions on the effects of human capital-related characteristics on managers' interview decisions for older job applicants for two reasons. First, from a human capital perspective, when the supply of labour increases during a recession, there will be more job applicants available with desirable human capital-related characteristics, such as the right qualifications for the job, relevant job history, and recommendations from sources who the hiring manager deems trustworthy (Robie et al., 2011). As such, managers will be less likely to invite job applicants who lack such characteristics for

interviews. Second, when there is a recession, organisations usually face a large negative shock in their business environment, which may result in organisational readjustment and cost-reduction programs (Van Dalen & Henkens, 2013). Difficult economic conditions such as a recession may thus lead to heavy scrutiny of organisational operations, which includes the process of personnel selection. This, in turn, may lead to managers relying more on well-justified human capital-related characteristics for making their interview decisions.

*H5: General economic conditions will moderate the effect of older job applicants' qualifications on managers' likelihood of inviting job applicants to job interviews, such that the negative effects of (a) overqualification and (b) underqualification will be stronger in worse general economic conditions.*

*H6: General economic conditions will moderate the effect of older job applicants' employment status on managers' likelihood of inviting job applicants to job interviews, such that the positive effect of job applicants' employment status will be stronger in worse general economic conditions.*

*H7: General economic conditions will moderate the effect of older job applicants' recommendation status on managers' likelihood of inviting job applicants to job interviews, such that the positive effects of having a recommendation from (a) a current employee and (b) a trustworthy fellow employer will be stronger in worse general economic conditions.*

Because economic conditions affect organisations in different ways, it is important to also consider within-organisation developments over time, as they affect human resource management practices (Jackson & Schuler, 1995) and are therefore expected to also influence

managers' evaluations of older job applicants. Here, we examine *managers' experience of changes in job demands in the organisation* as a moderator of the effects of job applicants' human capital-related characteristics on managers' evaluation of older job applicants. Job demands are defined as the amount of physical or psychological effort that is required by the job (Demerouti, Bakker, Nachreiner, & Schaufeli, 2001; Schaufeli, Bakker, & Van Rhenen, 2009). Managers' experience of changes in job demands in the organisation are more important than objective changes in job demands or workers' experiences, because managers are likely to draw on their own experience in analyzing what is needed for a job and making personnel decisions (Morgeson & Campion, 1997).

We do not expect a main effect of changes in job demands, but do expect that an increase in job demands will lead managers to be more selective in their interview invitation decisions, and that human capital indicators will be more important. According to the human capital perspective, workers with higher levels of human capital are more productive and are therefore less likely to experience high workload or stress in response to increasing job demands than workers with lower levels of human capital (Cole et al., 2007; Schaufeli et al., 2009). In other words, job applicants with higher levels of human capital are expected to be more resilient in the face of high job demands. Since the human capital of job applicants is inferred from characteristics such as qualifications, employment status, and relevant recommendations (Chen et al., 2011; Tsai et al., 2011), managers are expected to value these characteristics more favorably when they experienced increases in job demands themselves.

*H8: Managers' experience of changes in job demands will moderate the effect of job applicants' qualifications on managers' likelihood of inviting job applicants to job interviews, such that the negative effects of (a) overqualification and (b)*

*underqualification will be stronger for managers who have experienced an increase (vs. a decrease) in job demands.*

*H9: Managers' experience of changes in job demands will moderate the effect of job applicants' employment status on managers' likelihood of inviting job applicants to job interviews, such that the positive effect of job applicants' employment status will be stronger for managers who have experienced an increase (vs. a decrease) in job demands.*

*H10: Managers' experience of changes in job demands will moderate the effect of job applicants' recommendation status on managers' likelihood of inviting job applicants to job interviews, such that the positive effects of having a recommendation from (a) a current employee and (b) a trustworthy fellow employer will be stronger for managers who have experienced an increase (vs. a decrease) in job demands.*

## **Methods**

### *Sample and Procedure*

Two waves of a vignette experiment (also known as a factorial survey; Rossi & Anderson, 1982; Wallander, 2009) were conducted in 2010 and 2013 with a sample of managers from the Longitudinal Internet Studies for the Social Sciences (LISS) panel of CentERdata, Tilburg University. The vignette experiments were embedded in broader questionnaires about managers' images of younger and older workers, and participants were not informed of the specific purpose of the vignette experiments. The LISS panel consists of a representative sample of Dutch inhabitants who participate in monthly internet surveys on a variety of topics (Scherpenzeel & Das, 2010; more information can be found at <http://www.lissdata.nl>). For the

current study, we randomly selected a sample of 700 managers who had indicated to work in a management position and to be responsible for recruitment, selection, and hiring of employees in their organisation. 426 out of the 700 approached managers responded in the first wave of the study in May of 2010, for a response rate of 60.9%. Shortly before the second wave of the vignette experiment, participants were asked to complete a brief questionnaire on changes in their organisation since the first experiment. This questionnaire was separated from the second wave of the vignette experiment to limit the risk of carryover effects (Tourangeau, Rasinski, Bradburn, & D'Andrade, 1989). Of the 426 initial respondents, 275 participated in the second wave of the vignette experiment in April of 2013, for a retention rate of 64.6%. Managers who changed jobs, had gotten unemployed or had retired between the two waves of the vignette experiment ( $n = 64$ ) were excluded from the analysis, rendering a final sample size of 211. The average age of managers was 48.35 years old ( $SD = 9.44$ ) at the time of the second vignette experiment. The majority of managers in the sample were male (70.1%). 23.2% of the managers worked in the industry and construction sector, 22.8% in the services and trade sector, 25.6 in the public sector, and 28.4% in other non-specified sectors<sup>1</sup>.

A vignette experiment combines survey questions with experimental methods, and is considered especially suitable to uncover the underlying structure of human judgments in social contexts (Rossi & Anderson, 1982; Wallander, 2009). Participants in this type of experiment usually see a vignette that contains descriptive information about the situation, after which they are prompted for their judgment. In the current study, the vignettes contained variables on three human capital-related characteristics of the older job applicant (qualifications, employment

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<sup>1</sup> The managers' age, gender, and the industry of their organization did not significantly influence the dependent variable or moderate other effects, and are therefore not included in the models presented here.

status, and recommendation) and two control variables (applicant's age and gender). The values on these vignette factors are randomized, so that each combination of values is equally likely (an example of a random vignette is presented in the Appendix). Because of this, the vignette factors are independent of each other and their effects can be reliably estimated (Wallander, 2009). It is common to have participants complete multiple vignettes, in order to increase the reliability of the estimates and to be able to assess both between-subject and within-subject effects (Wallander, 2009). In the current study, participants completed five vignettes in each wave, so there were ten observations for each participant. Our final sample thus consisted of 2,110 vignette observations from 211 participants, evenly split over the two waves.

### *Measures*

**Qualifications.** Job applicants' qualifications were manipulated. Applicants were described in the vignettes as "underqualified", "qualified", or "overqualified." We used the "qualified" category as the reference category in the analysis for this variable.

**Employment status.** Job applicants' employment status was manipulated. Applicants were described in the vignettes as either "employed elsewhere" or "unemployed". We used the "unemployed" category as the reference category in the analysis for this variable.

**Recommendation.** Job applicants' recommendation was manipulated. Applicants were described in the vignettes as "recommended by a current employee", "recommended by a trustworthy fellow employer", or had "no recommendations." We used the "no recommendations" category as the reference category in the analysis for this variable.

**General economic conditions.** The general economic conditions were assessed with a dummy for the year in which the experiment took place. Observations under relatively worse

general economic conditions (April 2013) were coded 0; observations from relatively better general economic conditions (May 2010) were coded 1.

**Managers' experience of changes in job demands.** In the questionnaire conducted two months before the second wave of the vignette experiment, managers' experience of changes in job demands was assessed with a single question that read "In the last 3 years, how did the job demands change in your organisation?" The answers were recorded on a 5-point scale (1 = "strongly decreased"; 3 = "remained the same"; 5 = "strongly increased").

**Interview invitation decision.** The managers' decision whether or not to invite a job applicant for an interview was measured on a scale from 1 ("very unlikely") to 11 ("very likely").

**Control variables.** Job applicants' age was manipulated and appeared on the vignette. Applicants were 50, 54, 58, or 62 years old, with 62 as the reference category in analysis. Job applicants' gender was also manipulated in the vignette, with female as the reference category in the analysis.

### *Analytic Strategy*

The data contained a nested structure, with responses to 10 vignettes nested within each participant. Therefore, we performed multilevel modeling to account for this data structure in Mplus 7 software (Muthén & Muthén, 2012). Specifically, a two-level model was specified. At Level 1 (i.e., the within-individual level), we created a dummy variable for year to distinguish between vignettes from the two different general economic conditions (i.e., 0 = "2013" and 1 = "2010") and five other sets of dummy variables for applicants' qualifications, employment status, recommendation, age, and gender. The interaction terms between general economic

conditions and applicants' human capital-related characteristics were created by multiplying the dummy variables accordingly. We then specified the random effects (i.e., random slopes) of each vignette-based dummy variable, the fixed effect of the dummy variable of general economic conditions, as well as the fixed effects of general economic conditions by human capital characteristic interaction terms on likelihood of job interview. At Level 2 (i.e., the between-individual level), we specified the fixed effects of managers' experience of changes in job demands (grand-mean centered before analysis) on likelihood of job interview and on the random slopes we specified at Level 1.

## **Results**

### *Preliminary Analysis*

Means, standard deviations, and correlations of the non-manipulated study variables are presented in Table 1. Overall, participants were on average slightly unlikely to invite older job applicants to an interview (Mean = 5.33; within-person  $SD = 2.41$ ; between-person  $SD = 1.58$ ). One-way random-factor analysis of variance results showed that the between-person variances were significant for the dependent variable, intraclass correlation coefficient ( $ICC1 = .35$ ,  $F(210, 1,899) = 6.43$ ,  $p < .01$ , warranting the use of multilevel modeling for analyzing the current data. Further, the average score of managers' experience of changes in job demands (Mean = 3.82;  $SD = 0.87$ ) indicates that, on average, managers experienced an increase of job demands in their organisations between 2010 and 2013.

*Hypothesis Testing*

Unstandardized coefficient estimates for the model are presented in Table 2. Model I presents a baseline model which only contains Level-1 main effects of job applicants' characteristics and the general economic conditions on managers' likelihood of inviting job applicants for interview. Applicant's qualifications were related to managers' interview invitation decisions in the expected direction. Managers were less likely to invite job applicants that were either underqualified ( $\gamma = -1.58, p < 0.01$ ) or overqualified ( $\gamma = -0.24, p < 0.05$ ) than those that had qualifications fitting the job description. This supports Hypothesis 1. Further, managers were more likely to invite job applicants that were employed elsewhere than applicants that were unemployed ( $\gamma = 0.39, p < 0.01$ ), providing support for Hypothesis 2. Managers were also more likely to invite job applicants with a recommendation from a current employee of the organisation ( $\gamma = 0.34, p < 0.01$ ) or from a fellow employer ( $\gamma = 0.33, p < 0.01$ ) than those with no recommendation. This provides support for Hypothesis 3. These results indicate that older job applicants' human capital-related characteristics are very important for managers to make the decisions regarding whether or not to invite them for job interview.

We also found that managers' likelihood to invite older job applicants for job interview was higher when general economic conditions were better (i.e., in May 2010) than when general economic conditions were worse (i.e., in April 2013),  $\gamma = 0.55, p < 0.01$ . This supports Hypothesis 4, indicating that managers' likelihood to invite older job applicants for job interview was higher in better general economic conditions.

In Model II, the interaction effects between the general economic conditions and the applicants' characteristics were added, as well as the cross-level interaction effects between managers' experience of changes in job demands and applicants' characteristics, and the

between-individual main effect of managers' experience of changes in job demands. Snijders and Bosker's (1999) formulas were used to calculate pseudo- $R^2$  ( $\sim R^2$ ) for the effect sizes in predicting the outcome variable. All predictors included in the model accounted for 19% of the total variance in managers' interview invitation decisions, suggesting the model explained a sizeable portion of the variation in the outcome variable. As presented in Table 2, the majority of the main effects of human capital-related characteristics on managers' likelihood of inviting job applicants for interview still held significant, except for the effect of overqualified vs. qualified ( $\gamma = -0.13, p > 0.05$ ). Further, Model II shows that the interaction effects between the general economic conditions and the applicants' qualifications and employment status were not significant, providing no support for Hypotheses 5 and 6. However, the interaction between general economic conditions and the applicant being recommended by a fellow employer was significant ( $\gamma = -0.51, p < 0.01$ ) in predicting managers' job interview decisions. This interaction effect is illustrated in Figure 1, which shows that managers were more likely to invite applicants who hold a recommendation from a fellow employer than those with no recommendations when the general economic conditions were worse. This finding provides support for Hypothesis 7b (but not Hypothesis 7a), indicating that a recommendation from a fellow employer was more strongly associated with managers' job interview decisions when the general economic conditions were worse.

With regard to changes in job demands, Table 2 shows that the interaction effects between changes in job demands and the applicants' qualifications and employment status were not significant, providing no support for Hypotheses 8 and 9. There is an interaction effect between changes in job demands and the applicant being recommended by an employee of the organisation ( $\gamma = 0.38, p < 0.01$ ) in predicting managers' job interview decisions. This interaction

effect is illustrated in Figure 2, which shows that when managers had experienced an increase (vs. decrease) in the level of job demands in recent years, they were more likely to invite older job applicants with a recommendation from a current employee of the organisation to an interview than those with no recommendations. This provides support for Hypothesis 10a (but not Hypothesis 10b), indicating that a recommendation from an employee of the organisation was more strongly associated with managers' job interview decisions when they had experienced an increase in job demands.

## **Discussion**

In the current study, we found that managers' interview invitation decisions regarding older job applicants were strongly associated with applicants' human capital-related characteristics. In particular, managers were more likely to interview older job applicants who had matching qualifications than those who were underqualified or overqualified, who were employed elsewhere over those who were unemployed, and who had recommendations from an employer or an employee of the organisation over those who did not have such recommendations. Also, managers were more likely to invite older job applicants to an interview in better general economic conditions than in worse general economic conditions. Further, the effects of applicants' recommendations on managers' interview invitation decisions were moderated by the general economic conditions and managers' experiences of changes in job demands, with a recommendation from a fellow employer being especially relevant in bad economic conditions, and a recommendation from an employee within the organisation being especially relevant when job demands had increased.

We did not find the hypothesized interaction effects between the other two human capital-related characteristics (i.e., applicants' qualifications and employment status) and general economic conditions and changes in job demands. A possible reason might be that job applicants' qualifications and employment status were extremely important in managers' decision-making regarding interview invitation. Therefore, regardless of economic and organisational contexts, the effects of these human capital-related characteristics appeared to be quite robust.

#### *Theoretical and Practical Implications*

The current findings have important theoretical and practical implications. First, theoretically, our findings support the human capital mechanism that has been suggested in earlier studies (e.g., Chen et al., 2011; Cole et al., 2007; Tsai et al., 2011), and thus shows that human capital-related characteristics are one of the most important drivers of managers' interview invitation decisions when screening older job applicants. More specifically, we found that underqualification and overqualification were both harmful to older job applicants' interview opportunity, but that underqualification was about 6 to 7 times more harmful than overqualification in terms of its predictive effect. This supports the suggestion by Erdogan et al. (2011) that overqualification should not be as detrimental for older workers as it is for younger workers, because older workers are often more motivated to provide support and mentor others than younger workers, and as such are less likely to display high turnover rates and low motivation that are often observed among overqualified employees. Further, our results offer support for the notion that the unemployment status may manifest as a stigma that can lead to

unjustified perception of lower human capital on the part of job applicants, which may be especially relevant for vulnerable groups such as older workers (Karren & Sherman, 2012).

Second, our results also indicate that managers were more likely to invite older job applicants to a job interview when general economic conditions were better, and that general economic conditions and managers' experiences of changes in job demands moderated the effects of applicants' recommendations on managers' interview invitation decisions. These findings support previous research that suggests general economic conditions affecting organisations' human resource practices in various ways, which may specifically affect older workers or older job applicants (Robie et al., 2011; Van Dalen & Henkens, 2013). With regard to the effects of recommendations, our results showed that recommendations from a fellow employer were especially important in bad economic conditions, whereas a recommendation from an employee of the organisation was especially important when job demands had increased in recent years. This may be because managers trust other employers to be better able to judge whether a job applicant is suitable for an organisation in rough general economic conditions, whereas managers may trust current employees of the organisation more to judge whether the job applicant can deal with the job demands in the organisation.

Moreover, although not the prime focus of this study, we did find a negative effect of applicants' age on managers' interview invitation decision. This corroborates findings from earlier studies regarding age discrimination in hiring (Roscigno et al., 2007), and shows that even within the group of older job applicants, age negatively affects labour market success (Karpinska, Henkens, & Schippers, 2013; Oude Mulders, Van Dalen, Henkens, & Schippers, 2014). The results do not show any interaction effects between applicants' age and general economic conditions and changes in job demands, suggesting that within the group of older job

applicants, the young-old job applicants were not less negatively affected by difficult economic or organisational circumstances than old-old job applicants. This finding informs the changing legislative framework in which employers operate and supports the notion that both young-old and old-old job applicants deserve the same level of protection in the face of adverse labour market conditions (Beck, 2013).

Practically, on the policy level, although most developed countries have anti-age discrimination legislation in place, Neumark and Button (2014) have found that such legislation has not been particularly helpful in protecting older workers, and may sometimes even be detrimental to older workers' employment potentials. Addressing the disadvantage that older workers and job applicants may face, our findings suggest that older job applicants themselves can increase their chances of job market success by updating their qualifications during their career. Also, policy makers could try to make training more attainable for older job workers so their qualifications are more in line with changing job requirements. Organisations can also try to adjust their job design and personnel selection procedure to attach more value to older job applicants' experience and mentoring skills (Wang, Olson, & Shultz, 2013).

#### *Limitations and Future Research*

This study has several limitations. First, an inherent limitation of the vignette experiment method is that participants judge hypothetical situations, which limits the generalizability of the findings (Hainmueller, Hangartner, & Yamamoto, 2015; Wallander, 2009). In particular, real world selection managers or recruiters have more detailed information available about job applicants than we were able to provide in the experiment. In addition, the judgments in the experiment are without consequences for the managers and their organisations, which may imply

an underestimation of the effects of several important factors (Pager & Quillian, 2005). Still, we studied the interview invitation decision in a sample of real world managers, who in reality also judge an applicant's résumé on paper or on screen without meeting the applicant in person (Derous et al., 2015; Landy, 2008). It is important for future research to study both actual behavior and improve the external validity of research by using designs that mimic real-world incentives for the participants, such as the paired conjoint design (Hainmueller et al., 2015).

Second, the study design limited the opportunity to examine interaction effects. This applies especially to factors manipulated at Level 1, because a full factorial design is impossible given the amount of Level 1 variables that we studied in the current study and the small amount of vignettes that we asked the managers to evaluate. Future studies using large field samples (i.e., measuring characteristics of real job applicants) may be able to allow the evaluation of more interaction effects.

Third, we assessed changes in job demands with a single-item measure, two months before the second wave of the vignette experiment. Although the measure of changes in job demands was separated from the vignette experiments to limit carryover effects, future studies could increase the validity and reliability of the measure by assessing job demands at each wave of the experiment and computing change scores, as well as by using previously established multi-item scales, such as parts of the Questionnaire on the Experience and Evaluation of Work (QEEW; e.g., Schaufeli et al., 2009) or the Job Content Questionnaire (JCQ; Karasek, Brisson, Kawakami, Houtman, Bongers, & Amick, 1998).

Next to addressing these limitations, future research could try to expand on our findings by considering other types of personnel selection decisions and employment outcomes for older job applicants and older workers (Wang, Burlacu, Truxillo, James, & Yao, 2015). Also, future

research may focus on other organisational factors that may moderate the relationship between older job applicants' characteristics and organisations' human resource management decisions, such as the age composition of the organisation's workforce, the organisation of work in teams, and whether the organisation has gone through restructuring (Jackson & Schuler, 1995). In addition, future studies may try to replicate and expand on our findings focusing on a different country or studying national and cultural variation in a multi-country study (Ryan, McFarland, Baron, & Page, 1999).

### *Conclusion*

The current study demonstrated that managers' interview invitation decisions regarding older job applicants were strongly associated with the applicants' human capital-related characteristics, and were also affected by the general economic conditions. Furthermore, the effect of older job applicants' recommendations on managers' interview invitation decision was moderated by the general economic conditions and the changes in job demands. The findings suggest that older workers should pay attention to updating their human capital during their career, and employers and policy makers should create opportunities to facilitate that. Older job applicants also have to consider getting recommendations that come from relevant sources to improve their chances across different economic conditions and organisational contexts.

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**Table 1. Means, Standard Deviations, and Correlations of Non-Manipulated Study**

<b>Variables</b>							
Variable	Mean	Within- person <i>SD</i>	Between- person <i>SD</i>	1	2	3	4
1. Respondent's age	48.35		9.44				0.04
2. Respondent's gender	0.30		0.46	-0.03			-0.01
3. Change in job demands	3.82		0.87	0.07	0.11		-0.03
4. Likelihood of selecting applicant for job interview	5.33	2.41	1.58	0.06	-0.02	-0.04	

*Note:* The vignette characteristics were random, so they are not significantly correlated with each other or other variables. Correlations below the diagonal represent between-subject correlations ( $N = 211$ ). To calculate the between-subject correlation for the dependent variable (i.e., likelihood of selecting applicant for job interview) we averaged the within-subject scores. Respondent's gender was scored 0 for men and 1 for women. Correlations above the diagonal represent within-subject correlations ( $N = 2,110$ ).

\*  $p < .05$ ; \*\*  $p < .01$ .

**Table 2. Unstandardized Coefficients of the Multilevel Model**

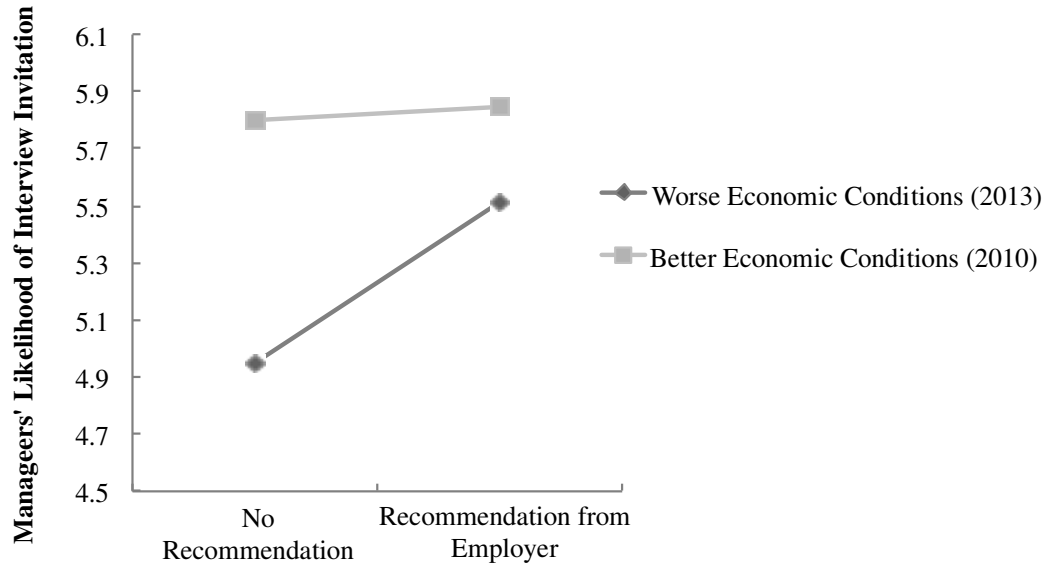
Variable	Likelihood of selecting applicant for job interview (Model I)		Likelihood of selecting applicant for job interview (Model II)	
	Estimate	<i>SE</i>	Estimate	<i>SE</i>
Fixed effects				
Intercept	5.08 ***	0.17	4.95 ***	0.20
Applicant underqualified (ref. = qualified)	-1.58 ***	0.13	-1.42 ***	0.17
Applicant overqualified (ref. = qualified)	-0.24 *	0.11	-0.13	0.15
Applicant employed elsewhere (ref. = unemployed)	0.39 ***	0.09	0.36 **	0.12
Applicant recommendation from employee (ref. = no recommendation)	0.34 **	0.11	0.42 **	0.15
Applicant recommendation from employer (ref. = no recommendation)	0.33 **	0.10	0.56 ***	0.13
Applicant age 50 years (ref. = 62 years)	0.64 ***	0.12	0.66 **	0.20
Applicant age 54 years (ref. = 62 years)	0.55 ***	0.12	0.62 ***	0.17
Applicant age 58 years (ref. = 62 years)	0.18	0.10	0.05	0.16
Applicant male (ref. = female)	-0.09	0.08	-0.16	0.11
General economic conditions (GEC)	0.55 ***	0.15	0.85 **	0.29
Changes in job demands (CJD)			-0.16	0.20
GEC * Underqualified			-0.31	0.21
GEC * Overqualified			-0.25	0.21
GEC * Employed elsewhere			0.06	0.17
GEC * Recommendation from employee			-0.20	0.20
GEC * Recommendation from employer			-0.51 **	0.19
GEC * Age 50 years			-0.02	0.26
GEC * Age 54 years			-0.18	0.23
GEC * Age 58 years			0.24	0.21
GEC * Male			0.15	0.16
CJD * Underqualified			-0.24	0.15

CJD * Overqualified				0.04		0.13
CJD * Employed elsewhere				0.05		0.10
CJD * Recommendation from employee				0.38	**	0.12
CJD * Recommendation from employer				0.14		0.12
CJD * Age 50 years				0.21		0.13
CJD * Age 54 years				-0.13		0.13
CJD * Age 58 years				-0.08		0.11
CJD * Male				-0.06		0.08
Variance components						
Level 1 residual variance		2.51	***	0.20		2.47 *** 0.20
Level 2 residual variance		2.03	***	0.27		1.94 *** 0.27

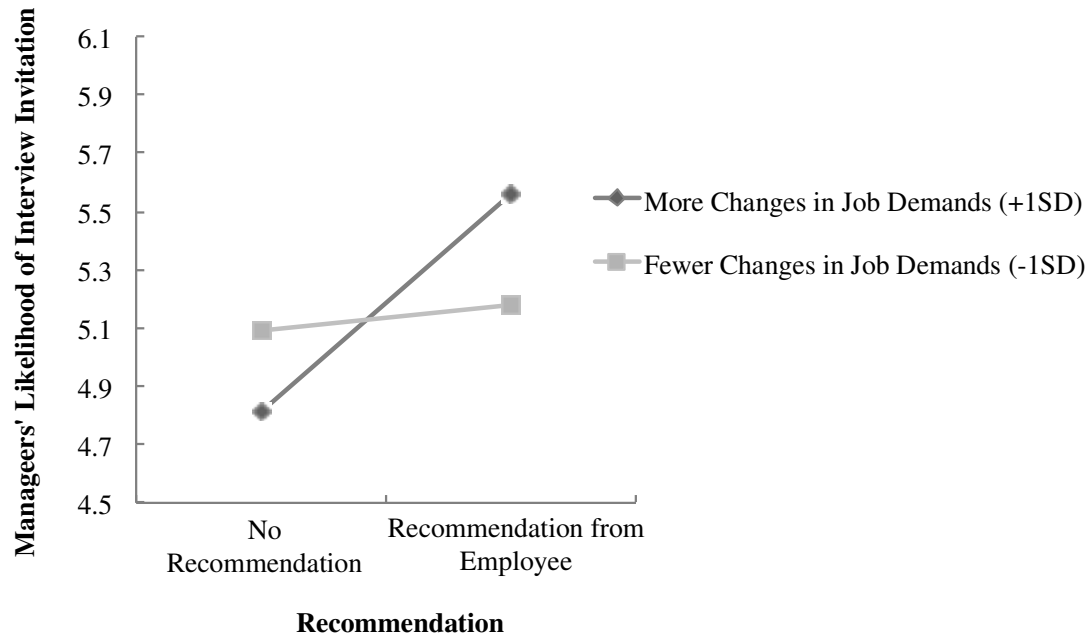
Note: GEC = General Economic Conditions; CJD = Changes in Job Demands

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

**Figure 1. Illustration of the interaction effect between general economic conditions and applicants' recommendations.**



**Figure 2. Illustration of the interaction effect between managers' experience of changes in job demands and applicants' recommendations.**



**Appendix**

**Figure A1. Example of a vignette.**

Consider a situation where your organization is looking for new employees. You will be shown key characteristics of several job applicants. Please indicate, for each applicant, the likelihood that you would select this person for a job interview.

Age	54 years
Gender	Female
Qualifications	Underqualified
Employment status	Still employed elsewhere
Recommendation	From one of your current employees

**What is the likelihood that you would select this person for a job interview?**

1	2	3	4	5	6	7	8	9	10	11
Very unlikely			Neutral					Very likely		