Why are unemployed aged fifty and over less likely to find a job? A decomposition analysis

Sarah Vansteenkiste^{a,*}, Nick Deschacht^b, Luc Sels^a

^a Research Centre for Organization Studies, Faculty of Economics and Business, KU Leuven, Belgium

^b Human Relations Research Group, Faculty of Economics and Business, KU Leuven, Campus Brussels, Belgium

ARTICLE INFO

Article history:

Received 17 March 2015

Received in revised form 15 July 2015

Accepted 16 July 2015

Available online 21 July 2015

Keywords:

Reemployment chances

Unemployed

Job search

Decomposition

Age

ABSTRACT

Reemployment chances for unemployed aged fifty and over are low compared to those of younger persons. To explain the different chances, the job search literature has largely focused on the job search behavior of unemployed individuals. Based on job search models, we propose that not only job search behavior, but also wage setting behavior, attitudinal variables and personal variables impact the difference in reemployment opportunities. Besides gaining insight into which variables explain the difference in reemployment opportunities, we also test how much of the difference each of these variables explains. We do this by drawing on a decomposition analysis. Using data from 647 recently unemployed, we find that about one third of the reemployment gap can be explained by the variables suggested by job search models, mostly in terms of age differences in search behavior, educational levels and reservation wage. Hence, about 70 % can be ascribed to other factors, such as employer preferences for those aged between 18 and 49. Implications of these results for theory, policy and practice are discussed.

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1. Introduction

Job finding rates from unemployed jobseekers aged fifty and over are extremely low compared with those for younger age groups (European Commission, 2010; OECD, 2006; Klehe, Koen, & De Pater, 2012; Wanberg, Kanfer, Hamann, & Zhang, 2015). To explain reemployment chances, the job search literature has merely focused on the job search behavior of unemployed individuals, whereas also other components are likely to be of influence. Up to now, most attention has gone to job search intensity as indicator of job search behavior (Kanfer, Wanberg, & Kantrowitz, 2001; Saks, 2005; Koen, Klehe, Van Vianen, Zikic, & Nauta, 2010). Job search intensity indicates how often jobseekers during a certain period of time conduct certain job search activities, like going to job websites, discussing job possibilities with former employers, etc. Still, the explanatory power of job search intensity for reemployment chances is rather limited (Kanfer et al., 2001; Sverko, Galic, Sersic, & Galesic, 2008; Vinokur & Schul, 2002; Wanberg, Glomb, Song, & Sorenson, 2005; Wanberg, Hough, & Song, 2002). In this study, we use general job search theories (e.g., Gorter & Kalb, 1996; Gorter, Nijkamp, & Rietveld, 1993) to differentiate between several determinants of reemployment. As such, we distinguish job search behavior, wage demands, attitudinal and personal variables. By studying differences between age groups, we answer the call made by scholars who point to the negligence of this important topic in job search research (e.g., De Coen, 2012; Posthuma & Campion, 2009).

In addition, we investigate whether differences in these variables can help explain differences in reemployment chances between people aged fifty and over and people aged between 18 and 49. Indeed, besides gaining insight into which variables explain the difference in reemployment opportunities between younger and older unemployed based on job search theories, we are also interested in the relative importance of each of the suggested variables. Clarifying this will help to work out specific policy measures aimed at

* Corresponding author at: Research Centre for Organization Studies, Faculty of Economics and Business, KU Leuven, Naamsestraat 69, 3000 Leuven, Belgium.
E-mail address: sarah.vansteenkiste@kuleuven.be (S. Vansteenkiste).

improving the reemployment opportunities for older unemployed and as such their employment rates. This is a second aim of this paper. To quantify the contribution made by the characteristics (such as job search behavior, and wage demands) suggested by the job search theories, we chose to draw on *decomposition* analysis. A decomposition analysis is a technique that mainly has been used to help explain differences in wages and promotions between men and women (e.g., Oaxaca, 1973; Fortin, Lemieux, & Firpo, 2011). It has provided valuable insights in this context. Until now, this methodology has not been used in analyses with respect to job finding rates of unemployed jobseekers. However, we demonstrate that this technique is highly suited for obtaining a better understanding of the specific differences in reemployment opportunities between subpopulations of the unemployed. Moreover, the original decomposition technique uses an OLS linear model to estimate the contributions each variable makes in explaining differences. We show that it is also possible to use a Structural Equation Modeling (SEM) model, which takes into account more complex pathways and indirect effects between the variables under study. Hence, by expanding this technique to a SEM model, we show how to account for underlying relationships between variables as is typically modeled in job search research (e.g., Côté, Saks, & Zikic, 2006; Crossley & Stanton, 2005; Saks & Ashforth, 2002; Van Hooft, Born, Taris, Van Der Flier, & Blonk, 2004; Vansteenkiste, Verbruggen, & Sels, 2013; Zikic & Klehe, 2006).

2. Determinants for reintegrating the unemployed

In job search theories of unemployment, looking for a job is a sequential process in which the probability of finding a job is modeled as the product of being offered a job and the probability of accepting the offer (Mortensen, 1986; Faggian, 2014). Some search theorists further split up the arrival process of job offers (e.g., Gorter et al., 1993) so that reemployment is modeled as the successful sequence of three necessary steps: (1) a job vacancy must be discovered by the job seeker, (2) the job seeker must be willing to apply for the job, and (3) lastly, the employer must also be prepared to hire the job candidate. Each of these steps interacts in different ways with the job seeker's age and other personal characteristics.

To be able to find a new job, an unemployed person must first be aware of potential vacancies (step 1). It is the only way in which the unemployed person can obtain adequate information to compare potential job opportunities and decide which jobs to apply for. Searching for, collecting information about, and actively responding to vacancies are necessary conditions for re-employment. In this context, the literature related to job search behavior mainly focuses on the intensity of the job search (Kanfer et al., 2001; Saks, 2005; Van Hooft, Wanberg, & van Hove, 2012). The intensity of the job search is the frequency with which a job seeker performs certain job search activities during a specific period (Blau, 1994). These job search activities include tasks such as reading job advertisements in newspapers, specialist publications or on the internet, approaching previous employers and so on. Job search research has repeatedly shown that a higher job search intensity among unemployed persons leads to a higher reemployment (Kanfer et al., 2001; Saks, 2005; Wanberg et al., 2015). Therefore we take job search intensity as determinant for reemployment. Moreover, as previous research suggests that older unemployed people approach their job search activities less intensively (Kanfer et al., 2001; Klehe et al., 2012), we hypothesize:

Hypothesis 1. The lower job search intensity of people aged 50 and over explains part of their lower reemployment opportunities.

It goes without saying that identifying job vacancies is not a sufficient condition for re-employment. The job seeker must also be willing to apply for a job (step 2). Several factors determine this willingness.

First and foremost, a great deal of literature demonstrates that the wage level offered for a new job is a major 'deal breaker' (Boswell, Roehling, LePine, & Moynihan, 2003; Osborn, 1990). More specifically, the reservation wage plays a role; this is the minimum wage that a job seeker must be offered before he or she is willing to accept the job offer (Prasad, 2003). Research connecting reservation wages and age is scarce (De Coen, 2012). Still, it seems to suggest that older people impose a higher reservation wage (Addison, Centeno, & Portugal, 2004; Christensen, 2001; Walker, 2003; Klehe et al., 2012) which could be due to payment-systems and tenure-related entitlements, among others. For instance, the use of seniority wages could create the impression that one has to earn more with increasing age, resulting in a higher reservation wage of older unemployed job seekers.

Hypothesis 2a. The higher wage demands of people aged 50 and over explain part of their lower reemployment opportunities.

Second, the commuting distance also plays a prominent role in the decision to accept a job or not (Boswell et al., 2003; Konrad, Edgar, Lieb, & Corrigan, 2000; Turban, Forret, & Hendrickson, 1998) and can as such be an important determinant in the reemployment process. The majority of research reports that older workers are less willing to travel for long periods resulting in a decreasing actual commuting time as people age (Brännäs & Laitila, 1992; Rouwendal & Rietveld, 1994; So, Orazem, & Otto, 2001; Turner & Niemeier, 1997), which can be explained by their increased preference for leisure time (e.g., Kooij, de Lange, Jansen, & Dijkers, 2008; Gauthier & Smeeding, 2003; Higgs, Mein, Ferrie, Hyde, & Nazroo, 2003).

Hypothesis 2b. The lower commuting willingness of people aged 50 and over explains part of their lower reemployment opportunities.

Third, the commitment to work influences the willingness to accept work. If job seekers find work important or if it is a key element in their lives, they will be more willing to accept a job (e.g., Wanberg, Kanfer, & Rotundo, 1999). Research shows that older people are less committed to work as they are approaching their retirement age. As people age, they put more value on leisure time and prefer to spend more time on hobbies and family (e.g., Kooij et al., 2008; Higgs et al., 2003; Gauthier & Smeeding, 2003). Indeed, older unemployed may think more of their time left and try to spend it with their family, especially when their partner is also at retiring age (Gauthier & Smeeding, 2003; Pienta, 2003). In addition, research also suggests that older people may experience a lower need to work

because they have generated more financial means during their life (e.g., [Wanberg et al., 2002](#)). This also may cause older unemployed jobseekers to be less committed to finding work again. This line of reasoning is confirmed in the study of [De Coen, Forrier, and Sels \(2013\)](#), which shows that employment commitment decreases in unemployed jobseekers from the age of 38 onwards.

Hypothesis 2c. The lower commitment to work of people aged 50 and over explains part of their lower reemployment opportunities.

Fourth, the expectations of close friends or family members related to finding work (i.e., subjective norms) result in additional pressure in the job search, which can be translated into an increased willingness to accept work ([Zikic & Saks, 2009](#); [Wanberg et al., 2005](#)). Unemployed persons aged 50 and over could experience less pressure from the close environment to search for a job as they are closing down to their labor market exit. For younger people, it seems socially less accepted to be out of work, while among older unemployed persons the culture exists that being in work is less of a requirement (e.g., [Vansteenkiste, Verbruggen, & Sels, 2012](#)).

Hypothesis 2d. The lower subjective norms of people aged 50 and over explain part of their lower reemployment opportunities.

Even if job seekers are informed of all the vacancies and are also willing to sign up for them, they can still be refused the job if the employer does not find them suitable (step 3). Personal variables, such as education, gender, ethnicity and an occupational disability have been shown to influence the employer's decision making process. In general, lower-educated, disabled persons and persons from non-European origin have more difficulties in convincing employers to get hired (e.g., [Baert, 2014](#); [Baert, Cockx, Gheyle, & Vandamme, 2013a](#); [Bertrand & Mullainathan, 2004](#); [Petit, 2007](#)). We presume that the share of persons with the latter characteristics differs between people aged 18–49 years and those aged fifty and over. It can be expected that younger newly unemployed are more often highly educated than persons of fifty and over given that educational levels have risen steadily over the past decades. We also expect that younger people who participate in the labor market are more often female, from non-European origin or disabled as their participation rates have also increased over time (see e.g., [Herremans et al. \(2015\)](#) for the labor market of Flanders).

Hypothesis 3a. The lower educational level of people aged 50 and over explains part of their lower reemployment opportunities.

Hypothesis 3b. The lower share of female persons among people aged 50 and over explains part of their lower reemployment opportunities.

Hypothesis 3c. The lower share of non-European persons among people aged 50 and over explains part of their lower reemployment opportunities. Specifically, we expect that this diminishes the difference in reemployment opportunities.

Hypothesis 3d. The lower share of disabled persons among people aged 50 and over explains part of their lower reemployment opportunities. Specifically, we expect that this diminishes the difference in reemployment opportunities.

However, even when we include all the aforementioned variables in our analyses, part of the difference in reemployment opportunities between people aged fifty and over and those aged between 18 and 49, may remain unexplained because of unobserved factors and employer preferences for those aged between 18 and 49 – possibly resulting from delayed compensation schemes, expected low employment tenure or age discrimination (e.g., [Klehe et al., 2012](#)). Companies use delayed compensation schemes as a way to lessen monitoring problems ([Lazear, 1979, 1981](#)). By using these schemes, workers shirk less and have greater productivity as they fear to lose the compensation otherwise. However, in this reasoning, companies avoid hiring older people as their shorter employment horizon implies that they will be less motivated by the schemes in comparison to younger persons ([Daniel & Heywood, 2007](#)). The expected low employment tenure of older workers also has a direct impact on their hiring chances ([Daniel & Heywood, 2007](#)). Companies regularly give training to employees. Older employees are expected to have a shorter duration in the company and hence lower returns on investment. For this reason companies have a higher interest in hiring people with a longer employment horizon, i.e., younger persons. Lastly, age discrimination may also occur. On the labor market, discrimination happens when someone is discriminated against on the grounds of a characteristic that has no intrinsic impact on labor productivity (a characteristic such as gender or ethnicity). Developments in legislation and research point to an increase in attention to discrimination based on age (e.g., [Lahey, 2010](#); [Posthuma & Campion, 2009](#)). The most relevant in this context is the theory of statistical discrimination, which suggests that individual employees are selected based on stereotypes of the group to which they belong. The cause of the problem lies in inaccurate information regarding the individual employee's actual productivity. Prejudices based on skin color, gender or age are quickly formed because these are cheap sources of information. For example, research suggests that employers believe older applicants are less productive whereas the evidence on the relation between age and productivity shows otherwise (e.g., [Neumark, 2001](#); [Posthuma & Campion, 2009](#); [Ng & Feldman, 2008, 2013](#)).

Hypothesis 4. After taking job search behavior, wage setting behavior, attitudinal and personal variables into account, part of the difference in reemployment opportunities remains unexplained due to unobserved factors and employer preferences for those aged between 18 and 49.

Based on previous research, we can hypothesize that several variables like job search behavior, wage setting behavior, attitudinal and personal variables may impact the difference in reemployment opportunities of people aged 50 and over compared to younger persons. However, the extent of the contribution made by each of these variables has not been studied yet and can therefore not be detected by drawing on previous research. Using decomposition analyses we can identify this, which is key to this study. Hence,

next to the hypotheses we formulated above, we also investigate the extent of the contribution made by each of the characteristics in explaining the difference in reemployment opportunities between people aged 50 and over and people aged 18–49.

3. Methods

3.1. Participants and procedure

In October–November 2011, we organized a survey of 6000 short-term unemployed job seekers in association with the Flemish¹ Public Employment Service (VDAB). In the event that the VDAB had an e-mail address for the unemployed person, the latter was invited to take part in the study by e-mail and he/she was able to complete the questionnaire online. If only the address of the unemployed person was available, he/she was sent the questionnaire by post. The aim of offering the questionnaire online as well as in written form, was to reach as large a group as possible, comprising high-skilled and semi- or unskilled individuals. The unemployed approached for the study had been unemployed for a maximum of three months. The study only included people who had a job before they became unemployed. Other groups such as school-leavers, who became unemployed without having acquired any work experience, were excluded. 1750 Flemish people participated in this survey (i.e., 29% of the original 6000 jobseekers). Three months after the initial questionnaire, the respondents were approached again and invited to participate in a second survey. This second questionnaire round included 1159 people (66% response), so for this group longitudinal data are available. After excluding respondents that were not actively job seeking ($N = 412$) and those that record an excessively high item non-response, this left 647 respondents. In total, 83% of the respondents were aged between 18 and 49 ($N = 534$) and 18% were aged fifty or over ($N = 113$). The majority of respondents are female (58%) and of European origin (93%). The average unemployment duration after the initial questionnaire was 1.6 months and 26% of the respondents were semi- or unskilled.

3.2. Measures

Job search intensity was measured using the scale of Blau (1994), which was included in studies such as those conducted by Côté et al. (2006), Sverko et al. (2008), Van Hooft et al. (2004), Wanberg et al. (1999). To examine job search intensity, ten job search activities were presented (such as reading job vacancies and re-writing a CV). Each of the respondents was asked to rate each one on a scale of one ('never or 0 times') to five ('very often: at least ten times') to indicate how frequently they had performed the activity in the past three months (Cronbach's $\alpha = 0.82$).

The number of application letters was examined by exploring the number of times that respondents had reacted to job vacancies and the number of unprompted applications they had sent in the past three months. Both indicators were added together to form a single variable.

Employment commitment was measured using the eight-item scale developed by Rowley and Feather (1987), which is often used in research literature (such as Kanfer et al., 2001; Sverko et al., 2008; Wanberg, Zhu, & Van Hooft, 2010). An example of an item is 'I would still want to work even if I won a lot of money on the lottery'. Answers were provided on a five-point Likert scale, ranging from one ('totally disagree') to five ('totally agree') ($\alpha = 0.85$).

The reservation wage was measured by asking how high the minimum net monthly wage had to be for a respondent to accept the corresponding job. If the net monthly wage related to a part-time job, then it was converted to the amount equal to its full-time equivalent.

The maximum commuting time was determined by asking respondents to indicate the maximum amount of time (in minutes) they are prepared to travel each day to work and back.

Subjective norms were assessed using the two-item scale developed by Vinokur and Caplan (1987), which has been used extensively in earlier research (such as that conducted by Wanberg et al., 2005; Zikic & Saks, 2009). An example of an item is: 'the person closest to me (such as my partner) thinks I should find a job in the next three months'. Answers could be provided on a scale ranging from one ('not at all') to five ('very true') ($\alpha = 0.87$).

Gender, nationality, occupational disability, duration of unemployment and level of education are variables that were supplied by the VDAB based on administrative data related to the respondents concerned. A non-EU nationality was defined as a current or previous nationality outside the EU 27 countries or the EFTA countries. A job seeker is considered semi- or unskilled if he/she does not possess a qualification or secondary education certificate.

3.3. Analysis

The re-entry rate from unemployment into paid work is analyzed using Oaxaca decomposition (Oaxaca, 1973; Fortin et al., 2011). This regression-based technique was originally designed to break down the wage difference between two groups into one component that can be explained by group differences in explanatory variables and a residual that remains unexplained. Additionally, the total explained component can be broken down into contributions made by each of the different personal characteristics, whereby the sum of all the contributions is equal to the total explained component. This study applies the Oaxaca-technique to the difference in the chance of reemployment between the younger (those aged between 18 and 49 years old) and older (aged 50 and over)

¹ Flanders is the Dutch-speaking region of Belgium. The VDAB is a government organization that operates as the Public Employment Service for Flanders.

unemployed groups, in order to quantify the contribution of group differences in characteristics (e.g., educational levels or job search intensity) to the overall younger-older gap in hiring rates.

Some technical choices had to be made in the decomposition analysis. In an Oaxaca decomposition the contribution of an explanatory variable to the overall group difference between the mean outcomes of interest in two groups, is the difference of the group means of that explanatory variable multiplied by the estimated effect of that explanatory variable on the outcome of interest (Oaxaca, 1973). The effects are estimated using multivariate regression. A recurring issue in decomposition analysis is whether these effects are to be estimated for the first group (say the younger workers) or the other group (the older workers). Rather than either using the younger or older unemployed as the reference group, the effects in this study were estimated using a pooled sample (following Neumark, 1988). Pooling the data of younger and older workers together has the advantage that the regression coefficients are estimated more reliably (based on a larger sample). Another issue relates to the functional form of the regression model because the dependent variable in this study is binary (to be reintegrated or not). The effects are estimated using a linear probability model (LPM), which is a linear model applied to a binary dependent variable. An LPM is used because it has advantages over logit or probit models (Angrist & Pischke, 2008; Mood, 2010): the coefficients of the LPM model are easy to interpret in terms of probabilities and logit/probit models are more vulnerable to omitted variable bias. Usually cited drawbacks of the LPM can either be technically corrected (e.g., heteroscedasticity) or they do not apply in this study (e.g., in an LPM the predicted probabilities could be outside the 0–1 range, but in this study the sole interest is in estimating partial effects and not in prediction). More importantly, in the context of decomposition the LPM has the advantage that the standard (linear) Oaxaca-framework can be applied where the contributions of the explanatory variables are easily understood and where sum of these contributions exactly equals the total explained part – which is not the case in the non-linear decomposition techniques proposed by Yun (2004) and Fairlie (2005). Nevertheless, the analyses were repeated using such a non-linear decomposition based on a logit model to confirm that the results are very similar to those in the LPM specification (results are available upon request).

In a multivariate regression model the coefficients measure marginal effects holding all the other included variables in the model constant. This may not produce realistic estimates of the effects of the explanatory variables in this study. For example, the marginal effect of search intensity on reemployment chances in a multivariate model is estimated holding constant the number of job applications a job seeker sends out. This would underestimate the true effect of search intensity because higher search intensity increases the number of applications. In order to allow for such indirect effects a structural equation model (SEM) of reemployment chances was estimated (Fig. 1). This model is based on insights of previous research (e.g., Kanfer et al., 2001; Saks, 2005; Sverko et al., 2008; Wanberg, Watt, & Rumsey, 1996; Wanberg et al., 1999, 2005). The total effects – both direct and indirect – of the variables in the SEM are then used as effect estimates to carry out the Oaxaca-decomposition. The results of this SEM-based decomposition will be compared to those of the standard decomposition (LPM-based) to study the role of indirect effects.

In order to correct for potential response selectivity, weights were used to re-balance the sample. These weights were constructed using population-level data on four characteristics of all the short-term unemployed in Flanders: gender, nationality, level of education and duration of unemployment.

4. Results

4.1. Descriptive analysis

Table 1 compares the mean characteristics of recently unemployed job seekers aged 50 and over to those of job seekers aged between 18 and 49 in the sample. Between the initial questionnaire and the follow-up questionnaire (3 months later), 40% of the younger job seekers were reemployed (successful reemployment) compared to only 28% of the older job seekers. The difference is statistically significant but also “practically significant” in the sense that the difference is substantial. The ratio of these reemployment rates implies that 18 to 49 year-olds are more than 40% more likely to find a job than those aged 50 or over.

The mean job search intensity of 18 to 49 year olds is higher than that of those aged 50 and over and they on average sent out 3.4 application letters more than those in the older group. The mean reservation wage in the older group is 169 euro above that in the

Fig. 1. A structural model of reemployment chances of young and old jobseekers.

Table 1

Characteristics of respondents (variable means).

	18–49 year olds (Means)	50+ year-olds (Means)	Difference and t-tests
Re-entry rate	39.51%	27.88%	11.62%***
Job search intensity	3.36	3.15	.21**
Reservation wage	1566	1735	– 169***
Application letters	17.3	13.9	3.4*
Gender: female	.55	.41	.14**
Nationality: nonEU	.04	.00	.04***
Disabled	.06	.02	.04**
Partner	.73	.79	– .06
Education: middle	.42	.41	.01
Education: high	.21	.14	.07*
Employment commitment	3.47	3.43	.04
Maximum commute time	60.9	68.4	– 7.5*
Subjective norms	2.88	2.70	.18
Unemployment duration	1.25	1.26	– .01
Observations	534	113	

* $p < .05$.** $p < .01$.*** $p < .001$.

younger group. This is in line with what we expected. However, opposed to our expectations, the older recently unemployed in the sample are willing to commute on average 7.5 min longer than those in the younger group. Next, Table 1 shows that the older unemployed respondents do not have a significantly lower commitment to work or lower experience of subjective norms. Our assumptions regarding the difference in personal variables between older and younger unemployed are confirmed. Those aged 50 and over have a significantly lower share of higher-educated persons, non-EU nationals, females and people with occupational disabilities.

4.2. Decomposition analysis

Table 2 presents the results of the decomposition analysis, which sets out from the fact that the reemployment rate of 18–49 year-olds (39.51%) is 11.62 percentage points higher than that of those aged fifty and over (27.88%). In the standard decomposition (LPM) all the independent variables together explain 3.34 percentage points – or 29% – of the overall difference in reemployment rates. In the

Table 2

Decomposition of the difference in reemployment rates of recently unemployed.

	LPM		SEM	
	(1)		(2)	
	Coeff.	Percent	Coeff.	Percent
<i>Overall decomposition:</i>				
Reemployment rate: 18–49 year-olds (1)	39.51	–	39.51	–
Reemployment rate: 50+ year-olds (2)	27.88	–	27.88	–
Raw difference: (1) – (2)	11.62	100	11.62	100
Explained	3.34	29	3.46	30
Unexplained	8.28	71	8.16	70
<i>Detailed decomposition:</i>				
Job search intensity	0.55	5	0.80	7
Reservation wage	0.93	8	0.98	8
Application letters	0.70	6	0.91	8
Gender: female	0.90	8	1.00	9
Nationality: nonEU	– 0.60	– 5	– 0.52	– 4
Disabled	– 0.50	– 4	– 0.57	– 5
Partner	– 0.44	– 4	– 0.41	– 4
Education: middle	0.06	0	0.05	0
Education: high	0.99	9	0.88	8
Employment commitment	0.17	1	0.04	0
Maximum commute time	0.11	1	– 0.02	– 0
Subjective norms	0.24	2	0.10	1
Unemployment duration	0.23	2	0.23	2
<i>Sum of the contributions:</i>				
Total	3.34	29	3.46	30
N: 18–49 year-olds	534		534	
N: aged 50 plus	113		113	

SEM-based decomposition the total explained part is roughly similar. Therefore in both decompositions less than one third of the difference can be explained by the personal characteristics of the job seekers, while the rest (about 70%) remains unexplained. The large unexplained residuals are in line with *Hypothesis 4*, in which we assumed that part of the difference in reemployment opportunities would remain unexplained due to unobserved factors and employer preferences for younger unemployed.

In the detailed decomposition, the explained component is further broken down and attributed to the different explanatory variables. *Hypothesis 1* stated that the lower job search intensity of older people would explain part of their lower reemployment opportunities. Our results support *Hypothesis 1* because differences in search behavior – including both search intensity and the number of application sent – explain between 11 and 15% of the observed gap in re-entry rates. The contribution of job search intensity increases from 0.55 in the standard LPM-based decomposition to 0.80 in the SEM-based decomposition (i.e., an increase of about 45%). This suggests that the estimated effect of search intensity on job finding and the estimated contributions of search intensity to reemployment gaps may be seriously biased downward when they are based on multivariate approaches that do not account for the indirect channels through which job search intensity operates.

In *Hypothesis 2a*, we assumed that the higher wage demands of people aged 50 and over would explain part of their lower reemployment opportunities. This hypothesis is confirmed as wage demands explain 8% of the gap in reemployment opportunities. The contribution of wage demands is similar in the LPM and SEM decomposition. Furthermore, we presumed that the lower commute time of older workers (*Hypothesis 2b*), lower employment commitment (*Hypothesis 2c*) and lower subjective norms (*Hypothesis 2d*) would also explain part of the difference in reemployment opportunities. *Table 2* shows that *Hypothesis 2b* and *2c* cannot be confirmed, as the explained part in reemployment difference is negligible. *Hypothesis 2d* cannot be rejected, although the explanatory power of subjective norms is small, ranging from 1 to 2%.

In *Hypothesis 3a* and *3b*, we assumed that the lower educational level and lower share of female older persons would explain part of their lower reemployment opportunities. In the decomposition the lower educational level of older unemployed individuals explains 8 to 9% of their lower chance of finding a job. The fact that the older unemployed are predominantly male explains 8% of the gap. Hence we can confirm *Hypothesis 3a* and *3b*.

In *Hypothesis 3c* and *3d*, we believed that the lower share of non-European and disabled persons among the older unemployed would actually improve their reemployment perspectives compared to those of the younger group and would therefore be represented by a negative value in the detailed decomposition. We can confirm both hypotheses. The fact that relatively few non-EU nationals appear in the group of older unemployed people means that the difference in the chance of reemployment between the younger and older unemployed is now 4 to 5% lower than it would be if there were no relationship between the nationality and age of the unemployed. The fact that a higher number of younger unemployed people have an occupational disability also reduces the difference in chances of reemployment with 4 to 5%.

The evidence regarding this study's central research question on the size of the contributions, can thus be summarized as follows: (a) only about 30% of the age gap in re-entry rates can be explained by composition effects resulting from the variables included in the analysis, (b) about half of that explained part appears to be due to differences in search behavior and (c) differences in wage demands and personal variables also contribute, although to a lesser extent.

5. Discussion

In this study, we investigated which factors explain the difference in reemployment opportunities between people aged fifty and over and people aged between 18 and 49. Based on previous research, we believed that job search behavior, wage setting behavior, attitudinal variables, personal variables and also structural boundaries would impact the difference in reemployment opportunities. By drawing on a decomposition analysis, we were able to pinpoint the magnitude of the contribution made by each of these characteristics. Overall, our results show that all observable characteristics (job search behavior, wage setting behavior, attitudinal variables, personal variables) that we take up in our analyses, explain less than one third (between 29 and 30%) of the difference in reemployment rates between older and younger persons. Hence, about 70% can be ascribed to non-observed factors and employer preferences for those aged between 18 and 49.

5.1. Practical/policy implications

From this study it appears that older unemployed persons engage less in job search activities, which has a substantial impact on their reemployment. The fact that older unemployed people search less intensively for a job and send fewer application letters explains between 11 and 15% of their lower chance of reemployment. This is an important finding, certainly since the desire to work (commitment to work) does not seem to be affected among the older unemployed. Indeed, it does not appear that the unemployed aged fifty and over in our dataset are already focusing on their upcoming retirement. This may indicate that activation measures and active support for those aged fifty and over in their new job search can be effective. This activation could start as soon as they become unemployed, given the job search behavior of those aged fifty and above is significantly lower during the first months they are unemployed and the highest proportion (72.5%) of the older unemployed do not find work as a result of their own efforts after job seeking for three months.

We also find that older unemployed persons have a relatively high reservation wage which impedes their reemployment in the labor market. Eight percent of the difference in reemployment is explained by the higher financial demands made by the older unemployed. There may be two possible reasons for their higher reservation wage. On the one hand, it could be explained by the fact that young people's wage demands are relatively low given their level of training. A great deal of research shows that a large proportion of school-leavers choose jobs in which they are employed at a level that is below that for which they are qualified

(see, for example, Baert, Cockx, & Verhaest, 2013b; Verhaest & Van der Velden, 2013), probably with the view that it could be a stepping stone to better jobs over time. In this case, wage demands imposed by those aged fifty and over are not excessive, but are more or less normal given their level of education and skills. On the other hand, it is possible that the higher reservation wage demanded by this older age group is (partly) due to excessive wage demands. The reservation wage could be partly inflated by the seniority reward system (e.g., De Coen et al., 2013). Rewarding seniority gives employees and the unemployed the impression that receiving or demanding a higher wage in later life is self-evident. Furthermore, people in this system may become used to higher wages. The unemployed that previously worked develop a standard of living in accordance with the higher wage and cannot or will not accept a job for a lower wage. This system did prove useful in the past. It meant that in the initial career phase, employers invested in training new, young employees and so paid a wage that was often below their productivity contribution. In the second phase of his/her career, the employee received a higher wage that ensured that he/she stayed with the same employer, so that the latter did not lose his/her training investment. Given that careers have now grown more volatile and employees switch employers more often, the question remains as to whether such a system is still appropriate. The link between productivity and wage levels is not totally clear-cut in this system. Furthermore, it gives the impression that all people aged fifty and over involve high wage costs. It also means – as demonstrated by our results – that the older unemployed are less willing to compromise in their job search and therefore have a lower chance of being re-employed.

The decomposition analysis also revealed that the relatively lower level of education among older unemployed people explains between 8 and 9% of their lower chance of reemployment. Recent policy discussions have emphasized that the relatively low employment rate of persons aged fifty and over is particularly a problem among semi- or unskilled people (Bollens & Coomans, 2013). Our results confirm that the problematic reemployment of the semi- or unskilled unemployed aged fifty and over could help explain the relatively low employment rate of older semi- or unskilled people.

Next, there is still the finding that about two thirds of the difference in the chance of reemployment remains unexplained. The question arises as to what this unexplained residual actually means. We have not included 'age' as an explanatory variable in our analyses because it would be tautological to attribute the difference in the chance of reemployment between young and older unemployed groups to their age. However, age is also a relevant variable when studying labor market outcomes because it largely reflects experience, an important component of human capital. This implies that the unexplained component (the age effect) does not necessarily correspond to the extent of age discrimination. If one assumes that older employees are more experienced, and therefore more productive than younger ones, age discrimination against older people is even greater than the identified age effect. Conversely, if one assumes that older employees are less productive (in an environment in which knowledge becomes outdated more rapidly, experience can become a stumbling block), then the age effect cannot be fully attributed to discrimination. To date, research into the link between age and productivity is inconclusive (Forrier, Marescaux, & De Winne, 2010; Neumark, 2001; Posthuma & Campion, 2009).

The fact that just a third of the difference in the chance of reemployment between older and younger unemployed people can be explained is consistent with recent research into discrimination in employers' selection processes (e.g., Posthuma & Campion, 2009) and employers preferences for hiring younger persons due to their longer employment horizon making the return on investment of training bigger and delayed compensation schemes more effective in comparison with older persons (Daniel & Heywood, 2007). Our results indicate that people aged fifty and over are not the only ones responsible for their lower chances of reemployment. Indeed, to a certain extent they are also subject to other components that appear to be beyond their responsibility or control. This suggests that there is a need for policy that focuses more on employers (and on society as a whole) that tries to convince them that the prejudices related to people aged fifty and over are often unjustified. These prejudices can probably only be resolved by observing those aged fifty and over at work in the company and by finding that he/she can make the same contribution in terms of productivity, knowledge and know-how, etc. as any other employee. In Flanders, there is currently a system of entry-level training courses for young school-leavers to allow young people to gain work experience and convince the employer of their abilities. One possible train of thought could be to offer such courses for older unemployed people. This would also allow them to demonstrate that they can adequately contribute to the company and allow employers to discover that the many prejudices are often unjustified.

5.2. Theoretical implications

In job search research most attention has gone to job search intensity to explain reemployment chances (e.g., Kanfer et al., 2001; Saks, 2005; Koen et al., 2010; Van Hooft et al., 2012). However, almost all studies show that the relationship between job search intensity and reemployment is significant but rather weak (e.g., Kanfer et al., 2001; Sverko et al., 2008; Vinokur & Schul, 2002; Wanberg et al., 2002, 2005). Hence, we adopted a broader perspective in this study and included a rich set of explanatory variables. By drawing on the research of Gorter and Kalb (1996) and of Gorter et al. (1993), we used a solid theoretical framework to differentiate between several determinants for reemployment. This framework allowed us to take up variables typically used in job search research (e.g., job search intensity, number of application letters send, and employment commitment), but also variables that are dominantly present in economic research on unemployed (e.g., reservation wage, and commuting time). From our results, it appeared that job search variables only partly explain the difference in reemployment opportunities, supporting the idea to look beyond job search variables.

Next, by taking differences between age groups as the main focus in our study, we passed over the majority of research that takes age as a biographical variable in their explanatory model (e.g., Kanfer et al., 2001; Koen et al., 2010; Saks, 2005; Sverko et al., 2008; Van Hooft et al., 2004) and answered the call of several researchers who point to the negligence of this essential topic (e.g., De Coen, 2012; Posthuma & Campion, 2009). In this study, we showed that different age groups react differently to unemployment and are treated

differently by employers. Hence, we highlight the importance of treating older and younger age groups as distinct in job search research.

Lastly, we relied on decomposition analysis to explain differences in reemployment opportunities. Although decomposition analysis is not a new technique (see e.g., Oaxaca, 1973; Fortin et al., 2011), to our knowledge it has not yet been used in job search research. In this study, we show that it can lead to interesting results which add to the literature. A decomposition analysis reveals the extent of the contribution made by any variable of interest in explaining different reemployment opportunities between subpopulations of the unemployed. By introducing this technique to job search research and by demonstrating that also a SEM model can be used to estimate the contributions each variable makes in explaining differences, we open the way for more research. Other applications of this technique could be thought out and may as such expand our knowledge of reemployment (and even careers in the broad sense) substantially.

5.3. Limitations and directions for future research

There are some limitations to this study, which could be addressed in future research. First, institutional factors can influence our findings. For instance, the seniority reward system is strongly rooted in the Belgian labor market (De Coen et al., 2013) and may inflate reservation wages of older unemployed persons more than in countries where this system is less common. This may have an impact on the contribution made by the reservation wage in explaining the difference in reemployment opportunities. It could be interesting therefore to repeat this research in other diverse institutional settings.

Second, we focused on short-term unemployed, who have a greater opportunity to regain employment than relatively long unemployed persons and who may face less structural barriers in their job search. Hence, it could be useful for future research to also investigate long-term unemployed individuals and to look in more detail at the impact of the unemployment duration on the relationships investigated in this study.

Third, age is a dichotomous variable in our study, whereas researchers increasingly suggest to use age as a continuous variable in analysis (e.g., MacCallum et al., 2002). We use decomposition analysis in this study, which ultimate aim is to compare groups (i.e., age groups of older vs. other job seekers) and to then quantify to what extent the difference in job finding rates between these groups can be attributed to differences in characteristics of these groups. To carry out this decomposition we need to identify groups and to identify age groups we cannot avoid choosing a cut-off. The choice of 50 years as cut-off is in line with a bunch of research that categorizes jobseekers aged 50 and over as 'older' jobseekers (see e.g., Klehe et al., 2012; Goštautaitė & Bučiūnienė, 2015; Leung & Earl, 2012; Siegrist, Wahrendorf, Von dem Knesebeck, Jürges, & Börsch-Supan, 2007). To check the robustness of our results we repeated all our analyses for various alternative cut-offs to distinguish between older job seekers and the outgroup of non-older job seekers. The important finding of these additional analyses, is that they confirm the robustness of the results presented in the paper. For instance, the explained part of our analyses is not sensitive to alternative choices of age cut-offs.

Fourth, by using the framework of Gorter and Kalb (1996) and of Gorter et al. (1993) we differentiated between several determinants for reemployment. However, it is still possible that also other variables may explain the difference in reemployment opportunities, which may impact the size of the unexplained residual (which we call the structural boundaries older unemployed face). Indeed, the fact that the age effect (the unexplained component) is estimated in a residual manner in the decomposition – that is to say, after checking for a finite series of control variables – the question arises as to whether or not 'all relevant variables' are taken into account. This objection is partly justified: adjustment of the results by including an additional explanatory variable cannot be excluded and also constitutes a task for further research. Nevertheless, this reasoning leads some to conclude that the explained component in our decomposition would have been greater if there was a more effective verification of additional respondents' characteristics. However, this is not necessarily the case. Omitting the relevant variables does not result in a systematic overestimation of the age residual. Including an additional variable in the decomposition could increase the explained component (such as 'gender' in our analysis) as well as decrease it (such as 'nationality' in our analysis). Naturally, future research could try to bring better measures of worker productivity and other characteristics into the analysis.

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