Informal learning of temporary agency workers in low-skill jobs

The role of self-profiling, career control, and job challenge

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Abstract

Purpose – The purpose of this paper is to develop and investigate the idea that self-profiling and career control by temporary agency workers (TAWs) in low-skill jobs are positively related to informal learning and that this relationship is mediated by job challenge.

Design/methodology/approach – An online survey study was conducted among 722 TAWs in low-skill jobs in the Netherlands. Bootstrap mediation analyses were used to test the hypotheses.

Findings – Self-profiling and career control are positively related to informal learning of TAWs and these relationships are mediated by job challenge.

Research limitations/implications – This is the first study to develop and empirically test the proposition that self-profiling and career control are important factors for enhancing employees' learning experiences in low-skill jobs.

Practical implications – Hiring companies and temporary work agencies could stimulate and train TAWs' self-profiling and career control competencies to enhance their job challenge and informal learning. Organizations should consider assigning challenging tasks to TAWs, which may be a good alternative for expensive formal training programs.

Social implications – Many TAWs in low-skill jobs do not possess the skills and capacities to obtain a better or more secure job. In general, temporary workers face a higher risk of unemployment and greater income volatility (Segal and Sullivan, 1997). Gaining knowledge about how to develop this group is important for society as a whole.

Originality/value – Research on the determinants of informal learning mainly concerned higher-educated employees and managers with long-term contracts (e.g. Dong *et al.*, 2014), whereas very little is known about factors that stimulate informal learning among TAWs in general, and among TAWs in low-skill jobs in particular.

Keywords Informal learning, Temporary agency workers, Career control, Job challenge, Low-skill jobs, Self-profiling

Paper type Research paper

Introduction

The global economic transformation, the financial crisis and the 2010 sovereign debt crisis have increased the proportion of precarious jobs and vulnerable workers at risk of social exclusion (Burgess and Connell, 2006; Pollert and Charlwood, 2009). Temporary agency workers (TAWs) comprise one such vulnerable group. A substantial number of these workers fail to obtain more secure or better jobs, or even become unemployed (Autor and Houseman, 2005). For example, in the Netherlands approximately 33 percent

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of temporary workers lost their jobs between 2009 and 2011 (UWV, 2013) and in the crisis year 2008 the number of temporary workers dropped drastically from 205,000 in 2008 to just 164,000 in 2009 (CBS Statline, 2015). Most agency work requires low or medium skill levels and only 77 percent of TAWs have at best completed their secondary education (Ciett, 2013). Training, education and skill development are crucial not only for gaining access to more stable and higher-level jobs, but also for achieving career success (e.g. Ng *et al.*, 2005).

However, most temporary employment agencies and the companies hiring TAWs hardly invest in training, learning and skill development for TAWs, especially in the case of TAWs in low-skill jobs (Finegold *et al.*, 2005; Van Wijk *et al.*, 2013, 2014). TAWs receive less work-related training in comparison to permanent workers (Booth *et al.*, 2002). Moreover, TAWs in low-skill jobs often lack the means, time or motivation to follow formal education. Therefore, skill development and learning through daily activities and jobs, rather than expensive formal education and training, seems to be a more suitable approach to TAW development (Illeris, 2006). In fact, research suggests that most new skills and knowledge at work are gained through informal processes (Desjardins and Tuijnman, 2005; Skule, 2004) and that on-the-job work experience is the most effective form of employee learning and development (McCall, 2004; McCall *et al.*, 1988; Morrison and Hock, 1986). Moreover, skill development on-the-job has been found to be positively related to salary growth of TAWs (Finegold *et al.*, 2005). This apparent effectiveness of on-the-job experience is fortunate, because given that most temp agencies and hiring companies hardly invest in the formal development and learning of TAWs in low-skill jobs, it is therefore perhaps their only option for skill development. Hence, it is important to understand which individual competencies and job experiences may contribute to informal learning among TAWs.

However, to date, hardly any research has focussed on the issue of informal learning for this "neglected" group of TAWs. In career literature it is often emphasized that employees today have to become more self-directed in obtaining a variety of work experiences and knowledge through learning (Bird, 2002; Sullivan *et al.*, 1998) and this literature may help us gain insights in the factors that contribute to informal learning. Two individual career competencies of employees seem particularly relevant to informal learning: self-profiling and career control (e.g. Akkermans, *et al.*, 2013a, b). Self-profiling refers to presenting and communicating one's personal knowledge, abilities and skills to the internal and external labor market. Career control relates to actively influencing work and learning processes related to one's career by setting goals and planning how to reach them (Akkermans *et al.*, 2013a). In this paper, we argue that self-profiling and career control will be positively related to informal learning, because TAWs who promote their qualities and plan and control their careers are more likely to be engaged in valuable, challenging job experiences, which in turn enhance informal learning on-the-job (e.g. DeRue and Wellman, 2009; Noe *et al.*, 2013; Preenen *et al.*, 2011).

The aim of this study is to investigate the relationships between self-profiling, career control and informal learning, and the mediating role of job challenge in this relationship among TAWs in low-skill jobs. Based on theory and extant research, we develop hypotheses regarding these relationships and test them with data from a unique Dutch sample of TAWs in low-skill jobs ($n = 700$) who are normally very difficult to reach for research (Visscher, 1997).

With our study, we make several contributions to the literature. To date, a huge amount of research has been conducted on the learning and career opportunities of

employees with fixed or long-term contracts and highly educated workers and managers (e.g. DeRue and Wellman, 2009; Dong *et al.*, 2014; Dragoni *et al.*, 2009; McCauley *et al.*, 1994). However, very little research has focussed on individual factors that influence informal learning among TAWs in low-skill jobs. Although research on informal learning among other types of employees has received a lot of attention (e.g. Preenen *et al.*, 2011), research on the relationship between career competencies, job challenge and informal learning among TAWs in general, and TAWs in low-skill jobs in particular, is generally lacking in the literature. Moreover, empirical exploration of the individual factors that determine how challenged employees are at work has been encouraged but is very limited (Preenen *et al.*, 2014a, b).

Our study is important from a practical and societal perspective as well. The learning and development of vulnerable TAWs is gaining attention in many countries (e.g. Van Wijk *et al.*, 2013; 2014), due to shortages of qualified labor, equality considerations and compensation for higher mobility (Voss *et al.*, 2013), and has been acknowledged by the European Social Partners in the temporary agency work sector (Eurociett and UNI Europa, 2009). In sum, our study provides useful empirical and practical knowledge on factors that contribute to the on-the-job development and learning of a vulnerable group of TAWs.

Theory and hypotheses

In the following sections, we develop hypotheses about the relationships between self-profiling, career control, and informal learning, and the mediating role of job challenge in these relationships. First, we will briefly discuss theory and research concerning career competencies and informal learning. Next, we propose relationships between the two career competencies and informal learning. We then theorize how job challenge mediates the relationship between the two career competencies and informal learning.

Self-profiling, career control and informal learning

Career competencies can be defined as knowledge and abilities central to career development. Career competencies are malleable to some extent and are generally seen as predictors of work and career behaviors (e.g. Akkermans *et al.*, 2013a, b). Self-profiling refers to presenting and communicating one's personal knowledge, abilities and skills to the internal and external labor market, whereas career control concerns setting goals and planning how to reach them (Akkermans *et al.*, 2013a). Akkermans and colleagues have argued and shown that self-profiling and career control are different constructs (Akkermans *et al.*, 2013a) and are positively related to positive career behaviors and work outcomes, such as (perceived) employability (Akkermans *et al.*, 2013a) and work engagement (Akkermans *et al.*, 2013b). Self-profiling is conceptualized as a communicative competency, while career control is considered a behavioral career competency (Akkermans *et al.*, 2013a). Akkermans and colleagues distinguish several other career competencies in their career competencies model, namely, reflection on career motivation and career qualities, networking and exploration of work and career opportunities (Akkermans *et al.*, 2013a). However, we focus on self-profiling and career control because they are clear and important representatives of communicative and behavioral career competencies, respectively. Competencies that fall into a third category, reflective competencies, tend to focus inward on qualities like self-awareness, which seem more difficult to measure among TAWs in low-skill jobs. Moreover, self-profiling and career control seem most relevant for informal learning among TAWs in low-skill jobs as we explain below.

Informal or on-the-job learning refers to "all implicit or explicit mental and/or overt activities and processes, performed in the context of work, leading to relatively permanent changes in knowledge, attitudes, or skills" (Berings *et al.*, 2008, p. 418). Informal learning mainly concerns learning through daily work activities that are not specifically designed for learning.

Although development and learning at work depend partly on whether work offers an expansive learning environment (Fuller and Unwin, 2006), informal learning is largely under an individual's control and some employees may learn more than others in their job due to personal differences (Noe *et al.*, 2013). Generally, individual differences in personality and career competencies are important antecedents of motivation to learn and influence participation in voluntary development activities (Brown *et al.*, 2012; Colquitt *et al.*, 2000). Informal learning at work depends, among other factors, on individual actions and career capacities and adaptability (Brown *et al.,* 2012). To date, no empirical research exists on the relationship between the two career competencies and informal learning. However, based on the career literature and the literature on the determinants of learning, we believe that self-profiling and career control are positively related to informal learning.

First, TAWs who are high in career control may be particularly motivated to learn and develop themselves in their work because they have clear career goals and want to advance their careers. Informal learning provides them with new knowledge, skills and learning experiences that may help them to achieve their career goals and advance their careers. Indirect support for this proposition can be derived from research that has investigated individual outcomes of career motivation, a different but seemingly highly related construct to career control. Career motivation represents the motivation of employees to develop themselves in their jobs and careers, which includes having clear career goals (London, 1983, 1993). Career motivation promotes informal workplace learning activities (Van Rijn *et al.,* 2013) and motivation to learn (Meijers *et al.*, 2013). These findings suggest that TAWs' career control and informal learning may indeed be related.

Second, self-profiling TAWs may be interested in further enhancing their abilities in order to increase the range of skills and knowledge they can showcase. Though one can technically self-profile skills and accomplishments one does not have, it is more credible and beneficial to self-profile capabilities that can actually be demonstrated. Given this, TAWs interested in successfully self-profiling themselves should try to acquire as many skills and competencies as possible which enable them to broadcast these competencies to others. If there are no formal opportunities for skill development, it follows that these TAWs will engage in informal learning to augment their skillset.

Third, research on personality characteristics, specifically extraversion and conscientiousness, may provide some indirect empirical evidence for the relationships between self-profiling, career control and informal learning. Extraverts are outgoing, assertive and talkative, and may therefore be more competent in self-profiling (Akkermans *et al.*, 2013a). Conscientious individuals are careful, responsible and organized, and they tend to engage in future planning in general (Prenda and Lachman, 2001) and career planning in particular (Rogers *et al.*, 2008) and therefore also career control. Research on learning has shown that both extraversion and conscientiousness are associated with the motivation to learn, self-perceived learning ability, participation in active learning and self-development activities (Bakker *et al.*, 2012; Barrick and Mount, 1991; Colquitt *et al.*, 2000; Major *et al.*, 2006: Orvis and Leffler, 2011; Noe *et al.*, 2013), all of which are related to effective informal

learning and may provide some final "extra" support for the idea that self-promotion and career control relate positively to informal learning.

We hypothesize the following:

H1. Self-profiling (a) and career control (b) are positively related to informal learning.

The mediating role of job challenge

Our first hypothesis proposes that there is a direct relationship between the career competencies of self-profiling and career control and informal learning. In this section, we will elaborate on the question of how this relationship may further emerge. One of the most powerful ways in which individuals become engaged in learning and development is through challenging work (Brown, 2009; Brown *et al.*, 2012). People are challenged by their work when they are faced with activities that are demanding, stimulating, new and that call on their ability and determination (De Pater *et al.*, 2009a). Challenging activities have been defined as activities that: are new and ask for non-routine skills and behaviors, test one's abilities or resources, give an individual the freedom to determine how to accomplish the task and involve a higher level of responsibility and visibility (Van Vianen *et al.*, 2008). These challenging activities can be initiated by employees themselves or by others, such as peers, supervisors and managers (Preenen *et al.* 2014a). Although TAWs in low-skill jobs may often perform routine tasks, the amount of challenging work may still vary among TAWs. Individuals who hold similar jobs can differ considerably in the extent to which they have challenging experiences (De Pater *et al.,* 2009a, 2010), as we will explain below. We believe that that TAWs who are high in self-profiling and career control will both seek and attain more challenge in their jobs. This, in turn, will promote informal learning and may ultimately help them to advance their careers. Below, we will explain this step by step.

Self-profiling and job challenge

TAWs who pursue self-profiling activities will receive more challenging tasks in their jobs because they actively point out and communicate their abilities and accomplishments to others. First, these TAWs may experience more challenge because self-profiling enhances their communication, interaction and encounters with others (McCauley *et al.*, 1994).

Additionally they might present themselves in the most favorable and competent light with the aim of causing evaluators (e.g. supervisors) to attribute positive characteristics to them (Judge and Bretz, 1994), which in turn may result in them receiving more challenging assignments and roles in their jobs. Supervisors are often able to allocate challenging or non-challenging assignments to employees (Cianni and Romberger, 1995; De Pater *et al.*, 2010), particularly if they have authority over employees' work content (Preenen *et al.*, 2014a), which may especially be the case for supervisors in low-skill jobs. Supervisors and intermediaries are best served by choosing the most qualified and willing people to perform the most challenging tasks in order to enhance the chance of success on said task (De Pater *et al.*, 2009a). Indeed, supervisors perceive some of their employees as more trustworthy and capable and, and therefore, delegate more challenging assignments to them (Bauer and Green, 1996; De Pater *et al.*, 2010). However, they often lack the time to judge their employees' capabilities based on actual performance. This may also especially be true for supervisors in low-skill temporary work where TAWs sometimes only work for a couple of days or weeks. These supervisors may base their judgments of TAWs'

capacities on the self-profiling information the TAWs provide. When challenging assignments are being allocated, self-profiling TAWs will therefore be perceived as more capable and are more likely to be assigned these tasks.

While some TAWs may self-profile as a means of impression management, regardless of what their capabilities are, it could be that many may view it as a useful way to ensure the recognition of their actual accomplishments. When done properly, self-profiling informs others of a worker's competencies and increases the number of people who are aware of workers' competencies, thereby broadening the range of possible sources of receiving challenging tasks. In fact, letting others know one is up for a challenge could be perceived as a form of self-profiling in and of itself, further increasing one's chances of receiving challenging tasks.

We hypothesize:

H2. Self-profiling is positively related to job challenge.

Career control and job challenge

Career control will be positively related to challenge in TAWs jobs, because TAWs who set goals and plan their career will actively seek challenging assignments in their work and/or challenge themselves in the work tasks they have to perform. They may do so, for example, by setting high performance and quality goals in their work tasks. This, in turn, can help them develop new skills and competencies, train their hardiness and become visible to others, which can all help them achieve career goals such as getting longer-term or permanent employment, or moving up the career ladder. Indeed, challenging work experiences are considered as one of the most important prerequisites of career development and advancement (e.g. De Pater *et al.*, 2009a; Lyness and Thompson, 2000; McCall *et al.*, 1988), because they often involve a higher visibility to other people (McCauley *et al.*, 1994), but most importantly, because job challenge is one of the main determinants of learning and development (e.g. McCall *et al.*, 1988; McCauley *et al.*, 1994, 1999). Hence, career planners may perceive challenging assignments as a way to develop the skills and capacities that enable them to safeguard their jobs or advance in their careers (Kuijpers *et al.*, 2006).

In addition, TAWs high in career control may not only look for existing challenging activities and possibilities in their regular work, but may also seek and create their own challenging activities that go beyond their formal tasks. Employees can actively influence the content of their jobs by shaping, molding and redefining their tasks and by physically and/or cognitively changing task boundaries and work relationships (Wrzesniewski and Dutton, 2001). Indeed, employees have great discretion to engage in extra-role behaviors beyond the required task behaviors (Smith *et al.*, 1983). In fact, individuals holding the same job can perform different sets of tasks and perform different roles (e.g. Biddle, 1979; Graen, 1976; Ilgen and Hollenbeck, 1991). Employees may not only broaden or narrow the scope of their jobs by making decisions about which tasks to perform (Morgeson *et al.*, 2005) in order to enhance their job challenge, but they may also do so by extending their tasks and roles at work.

Although the latter may be more plausible for high-skill and high autonomy jobs, TAWs may also involve themselves in certain extra-role behaviors that are not part of their formal job requirements (Bateman and Organ, 1983). Such challenging activities that go beyond their regular tasks are, for example, helping and coaching coworkers, replacing supervisors if needed, solving problems at work, maintaining the workplace

and equipment, protecting and conserving organizational resources or organizing social events. TAWs high in career control may engage in these "extra" challenging activities to develop themselves in order to attain their work and career goals.

Hence, we hypothesize as follows:

H3. Career control is positively related to job challenge.

Job challenge and informal learning. We have proposed that self-profiling and career control are related to both informal learning (H1a and H1b) and job challenge (H2 and H3). In this section we combine these hypotheses by arguing that the association between self-profiling, career control and informal learning is at least partly due to the experience of job challenge. Involvement in challenging activities at work is associated with informal learning on-the-job (DeRue and Wellman, 2009; Dragoni *et al.*, 2009; Lyness and Thompson, 2000; Preenen *et al.*, 2011). Challenging assignments enhance on-the-job learning because they often involve new situations in which existing tactics and routines are inadequate and new strategies and skills have to be developed (Davies and Easterby-Smith, 1984; McCall, *et al.*, 1988). Challenging experiences "create disequilibrium, causing people to question the adequacy of their skills, frameworks, and approaches" (McCauley *et al.*, 2010, p. 9), which motivates them to develop new skills, abilities, insights, knowledge and competencies that enable them to function effectively (McCall *et al.*, 1988; McCauley *et al.*, 1994). Challenging assignments also create opportunities for on-the-job learning because they provide "a platform for trying a new behavior or reframing old ways of thinking or acting" (McCauley *et al.*, 1994, p. 544).

Altogether, we propose both direct and indirect relationships between self-profiling, career control and informal learning (see Figure 1). Self-profiling and career control are directly associated with informal learning through goal-directed motivation to learn. TAWs who are high in self-profiling and career control will be involved in informal learning because they want to increase the range of skills and knowledge they can showcase which will help them meet their career goals and planning. In addition, self-profiling and career control relate to informal learning indirectly through the performance of challenging tasks. Self-profiling may enhance an employee's chance of receiving challenging assignments, while career control may promote an employee's voluntary engagement in challenging activities that help them to attain their career goals.

We propose the following:

H4. Job challenge partly mediates the relationship between (a) self-profiling and informal learning and between (b) career control and informal learning.

Methods

Sample

Our sample consisted of 722 TAWs in low-skill jobs, such as production and warehouse work, in the Netherlands. Five medium-large to large Dutch temporary work agencies

Figure 1.
Hypothesized mediation model

working for all industries cooperated in our study. They sent an e-mail to 12,500 TAWs working in low-skill jobs in which respondents were asked to fill out an online questionnaire including demographics, self-profiling, career control, job challenge and informal learning. A total of 722 (response rate 6 percent) TAWs responded. Of the respondents, 62 percent were male. Mean age of the respondents was 36.15 years old (SD = 13.21) and 57 percent of the respondents held no secondary degree. The response rate was low but understandably so. First, this group of workers (in low-skill jobs) is not very keen on filling out questionnaires (Visscher, 1997). Second, it is known that digital questionnaires sent by e-mail generally elicit a lower response rate (Cook *et al.*, 2000; Sax *et al.*, 2003). Bulk e-mails sent by commercial organizations end up in spam folders (Evans and Mathur, 2005) or are blocked at e-mail servers (Bannan-Ritland, 2003). Third, the temporary work agencies were not able to send out reminder e-mails to TAWs who did not respond, which may have lowered our response by 20 to 40 percent (Dillman, 2000).

We compared our sample demographics with general statistics (statistics on TAWs in low-skill jobs were unavailable) of TAWs in the Netherlands in 2010 (De Jong *et al.*, 2012) and 2009 (Siermann, 2010). General descriptives such as age and gender should be comparable but education levels should be lower in our sample. Almost 60 percent (59, 7 percent) of the general TAWs in 2010 were male and the mean age was 33 years old, which was comparable to our statistics. In 2010, 35 percent of the TAWs in the Netherlands held no secondary degree. In our sample, this percentage was indeed much higher, as we focussed on the group TAWs in low-skill jobs. We concluded our sample to be sufficiently representative for our study goals.

Measures

Self-profiling. The extent to which respondents promote themselves in their job was assessed with three items derived from the career competences questionnaire developed by Akkermans *et al.* (2013a, b): "I can clearly show others what my strengths are in my work," "I am able to show others what I want to achieve in my career," "I can show the people around me what is important to me in my work." Respondents indicated their agreement with the items on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's α was 0.84.

Career control. The extent to which respondents plan their career was assessed with two items derived from the career competences questionnaire developed by Akkermans *et al.* (2013a, b). The original career control scale consists of four items, of which, broadly speaking, two focus on the ability for career planning and two on the ability for setting career goals. Due to data collection restrictions we, however, assessed only two items, including one item for career planning and one item for setting career goals. The two items were as follows: "I can create a layout for what I want to achieve in my career," "I am able to set goals for myself that I want to achieve in my career." Respondents indicated their agreement with the items on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's α was moderately high at 0.69 and a bit lower than in earlier studies (e.g. Akkermans *et al.*, 2013b; Cronbach's α: 0.88), which may be explained by the use of only two items for career control.

Job challenge. The extent to which respondents experienced job challenge was assessed with six items. This scale was based on job challenge scales used by De Pater and colleagues (De Pater *et al.*, 2009a) and Preenen and colleagues (Preenen *et al.*, 2011, 2014a). The items are: "I perform different tasks for which I need different skills,"

"In my job, I perform tasks that are varied," "In my job, I perform tasks that are difficult," "In my job I can use my skills and knowledge," "In my job, I can experiment with how the tasks can be done best" and "In my job, I have to come up with new ideas." Respondents indicated their agreement with the items on a scale ranging from 1 (strongly disagree) to 5 (strongly agree). Cronbach's α was 0.75.

Informal learning. The extent to which respondents learned informally was assessed with one item, derived from research by Borghans and colleagues (2011): "What percentage of your work time do you spend on tasks which you can learn from?" Respondents could fill in a number from zero to one hundred.

Control variables. We included respondents' age (in years), gender (0 = female, 1 = male), education level (1 = elementary school or lower, 2 = lower high school (VMBO/LBO), 3 = higher high school (HAVO/VWO), 4 = lower professional education (MBO 1), 5 = professional education or higher (MBO 2, HBO, WO)), nationality (0 = non-Dutch, 1 = Dutch), job tenure as TAW (1 = less than a month, 2 = one to six months, 3 = six months – one year, 4 = one to two year(s), 5 = two years and more), and the amount of hiring companies the TAW has worked for as control variables in our study to rule out some individual demographical differences that might alternatively explain our results. For example, age has been found to influence learning in other contexts (e.g. Colquitt *et al.*, 2000) and gender has been found to correlate with the level of self-profiling (Rudman, 1998) and job challenge (De Pater *et al.*, 2010). Moreover, a higher education level and employees' nationality may influence whether TAWs self-promote and plan their careers. In sum, these variables may affect our results and are included as control variables in our analyses.

Analyses

We tested the psychometric properties of our measures by means of confirmatory factor analyses (AMOS 21, Arbuckle, 2012). To examine the fit of the data we used several fit indices, such as the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root mean square error of approximation (RMSEA). CFI and TLI values of 0.90, and RMSEA values of < 0.08 indicate acceptable fit, whereas values of > 0.95 and < 0.06 represent a good fit (Hu and Bentler, 1999).

We tested our hypotheses and mediation model with the bootstrapping method as recommended by Hayes (2009, 2013). This method does not assume normality of the sampling distribution (Preacher and Hayes, 2008) of the indirect effect, as opposed to the Sobel (1982) test, and has the highest power and the best Type I error control. Bootstrapping is a statistical re-sampling method estimating the parameters of a model strictly from the sample (Preacher and Hayes, 2008) and computes more accurate confidence intervals of indirect effects than the more commonly used causal step strategy (Baron and Kenny, 1986), because it does not assume normality of the variables. This is especially relevant because indirect effects have distributions that skew away from zero (Shrout and Bolger, 2002).

Results

Means, standard deviations and correlations

Table I reports the means, standard deviations and inter-correlations of the study variables. Several control variables were significantly related to the main variables of our study. Age was positively related to job challenge ($r = 0.16$, $p < 0.01$). Older people report more job challenge.

Table I.
Means, standard deviations, and correlations among study variables

Variable	*M*	SD	1	2	3	4	5	6	7	8	9	10
1. Age	36.15	13.21	–									
2. Gender[a]	0.38	0.49	−0.02	–								
3. Education[b]	3.23	1.36	−0.23**	0.04	–							
4. Nationality[c]	0.90	0.30	0.05	−0.04	0.00	–						
5. Tenure as TAW[d]	3.36	1.34	0.26**	−0.06	−0.12*	−0.04	–					
6. Amount of hiring companies	2.55	3.46	0.08*	−0.05	0.01	−0.04	0.25**	–				
7. Self-profiling	3.76	0.97	0.16**	−0.04	0.04	−0.10**	0.06	−0.01	–			
8. Career control	3.53	1.04	0.04	−0.01	0.10**	−0.06	−0.05	0.03	0.62**	–		
9. Job challenge	2.56	0.85	0.16**	−0.10**	−0.11**	−0.07	0.12**	0.05	0.24**	0.24**	–	
10. Informal learning	31.13	29.01	0.02	−0.03	−0.06	−0.10**	0.00	0.02	0.17**	0.19**	0.55**	–

Notes: $n = 722$. [a]0 = female, 1 = male. [b]1 = elementary school or lower, 2 = lower high school (VMBO/LBO), 3 = higher high school (HAVO/VWO), 4 = lower professional education (MBO 1), 5 = professional education or higher (MBO 2, HBO, WO). [c]0 = non-Dutch, 1 = Dutch. [d]1 = less than a month, 2 = one to six months, 3 = six months – one year, 4 = one to two year(s), 5 = two years and more. *$p < 0.05$; **$p < 0.01$

Gender was negatively related to job challenge ($r = -0.10$, $p < 0.01$); males reported less job challenge than females. Education was positively related to career control ($r = 0.10$, $p < 0.01$) and negatively related to job challenge ($r = -0.11$, $p < 0.01$). This means that TAWs with more education control their careers more but experience less job challenge. Interestingly, nationality was negatively related to self-profiling ($r = -0.10$, $p < 0.01$) and informal learning ($r = -0.10$, $p < 0.01$). Non-Dutch respondents reported more self-profiling and informal learning than Dutch respondents. Tenure as a TAW was positively related to job challenge ($r = 0.12$, $p < 0.01$). This indicates that longer tenured employees are more challenged in their jobs. The correlations between the main study variables (self-profiling, career control, job challenge and informal learning) were all significant (r's 0.17 – 0.62, $p < 0.01$).

Because correlations between self-profiling and career control ($r = 0.62$, $p < 0.01$) and job challenge and informal learning ($r = 0.55$, $p < 0.01$) were substantial, multicollinearity problems may occur. We therefore conducted several confirmatory factor analyses (AMOS 21, Arbuckle, 2012). First, we compared our proposed three-factor model, in which the three self-profiling items, the two career control items[1], and the six job challenge items load onto separate factors with a one-factor model, in which all 11 items (self-profiling, career planning and job challenge) load onto one factor. The χ^2 difference test was used to compare the fit of the two models. A three-factor model is supported if the goodness of fit of the three-factor model surpasses the one-factor model.

Modification indices suggested that model fit could be enhanced by specifying error co-variances between two pairs of conceptually similar items assessing job challenge (items 1 and 2, and items 3 and 4). These parameters were included. The three-factor model ($\chi^2(39,\ n = 722) = 146.38,\ p = 0.00;\ \chi^2/\text{df} = 3.75;$ RMSEA = 0.06, SRMR = 0.05; CFI = 0.96; GFI = 0.97; TLI = 0.94, NFI = 0.95) yielded a better fit to the data than the one-factor model ($\chi^2(42,\ n = 722) = 575.55,\ p = 0.00;\ \chi^2/\text{df} = 13.70;$ RMSEA = 0.13, SRMR = 0.12; CFI = 0.80; GFI = 0.85; TLI = 0.73, NFI = 0.78), $\Delta\chi^2 = 431.17$, $p < 0.001$.

Second, we compared three two-factor models to the three-factor model (see Table II). Two-factor model A estimates whether the items of career control load onto one factor and the items of self-profiling and job challenge load onto a second factor; two-factor model B estimates whether the items of self-profiling load onto one factor and the items of control and job challenge load onto a second factor; two-factor model C estimates whether the items of job challenge load onto one factor and the items of career control and self-profiling load onto a second factor. The χ^2 difference test was used to compare the fit of the four models. A three-factor model is supported if the goodness of fit of the three-factor model surpasses those of the three two-factor models. The three-factor model yielded a significantly better fit to the data than the two-factor model A ($\Delta\chi^2 = 384.74,\ \Delta\text{df} = 2,\ p < 0.001$), the two-factor model B ($\Delta\chi^2 = 346.90$,

	χ^2	df	χ^2/df	RMSEA	SRMR	CFI	GFI	TLI	NFI
1-factor model	575.55	42	13.70	0.13	0.12	0.80	0.85	0.73	0.78
2-factor model A[a]	531.12	41	12.95	0.13	0.12	0.81	0.86	0.75	0.80
2-factor model B[b]	493.28	41	12.03	0.12	0.11	0.83	0.87	0.77	0.82
2-factor model C[c]	196.86	41	4.80	0.07	0.05	0.94	0.95	0.92	0.93
3-factor model	146.38	39	3.75	0.06	0.05	0.96	0.97	0.94	0.95

Notes: $n = 722$. [a]model A: career control vs self-profiling and job challenge; [b]model B: self-profiling vs career control and job challenge; [c]model C: job challenge vs career control and self-profiling

Table II. Confirmatory factor analyses

$\Delta df = 2$, $p < 0.001$) and the two-factor model C ($\Delta\chi^2 = 50.48$, $\Delta df = 2$, $p < 0.001$). All items loaded significantly ($p < 0.001$) on their hypothesized factor and the fit indices of the three-factor model indicated excellent fit (CFI, GFI, TLI and NFI values > 0.95). These results show some validity for the scales and indicate that the three scales are indeed measuring independent yet interrelated constructs.

Finally, we tested whether the informal learning item represents a distinct construct. Because a CFA with a four-factor model could not be estimated (a single item is not latent), we compared our one-factor model (including 11 items) with a one-factor model that also included the informal learning item (including 12 items) since in these models all items load on one latent factor. Our one-factor model with 11 items was significantly better than the one-factor model with 12 items ($\Delta\chi^2 = 177.66$, $\Delta df = 10$ $p < 0.001$) and only 7.6 percent of the variance in the informal learning item could be explained by the latent factor. These results supported our contention that the informal learning item represents a distinct construct.

Hypotheses testing

We predicted that self-profiling and career control would be positively related to informal learning (*H1a* and *H1b*) and job challenge (*H2* and *H3*). Furthermore, we predicted that the relationships between self-profiling, career control and informal learning would be partly mediated by job challenge (*H4a* and *H4b*).

We tested these hypotheses with the bootstrapping procedure for testing mediation as proposed by Hayes (2009, 2013). The path models that we tested included manifest variables. As recommended by Hayes, we report the path coefficients in the unstandardized form. For ease of interpretation, we also report the standardized coefficients (Table III and Figure 2). All control variables were included as covariates. Table III (column 1) shows that both independent variables (self-profiling and career control) were significantly related to job challenge (self-profiling: $B = 0.10$, $t\ (712) = 2.42$,

			Informal learning			
	Job challenge[a]		Model 1[b]		Model 2[c]	
Variable	*B*	*β*	*B*	*β*	*B*	*β*
Age	0.01*	0.09	−0.03	−0.01	−0.14****	−0.06
Gender[d]	0.01*	−0.08	−1.45	−0.02	1.31	0.02
Education[e]	−0.06*	−0.10	−1.62*	−0.08	−0.39	−0.02
Nationality[f]	−0.13	−0.05	−7.60*	−0.08	−5.05****	−0.05
Tenure as TAW	0.05*	0.08	−0.14	−0.01	−1.11	−0.05
Amount of hiring companies	0.00	0.02	0.10	0.01	0.02	0.00
Self-profiling	0.10*	0.11	2.45****	0.08	0.56	0.02
Career control	0.14**	0.17	3.96**	0.14	1.24	0.04
Job challenge					19.23***	0.56
F	11.60***		5.05***		39.91***	
R^2	0.12		0.05		0.33	

Table III.
Direct effects analyses with job challenge as mediator and informal learning as dependent variable

Notes: 5,000 bootstrapped samples. [a]Direct effects of independent variables on the mediator (job challenge). [b]Direct effects of independent variables on the dependent variable (informal learning). [c]Direct effects of independent variables and mediator on the dependent variable. [d]0 = female, 1 = male. [e]1 = elementary school or lower, 2 = lower high school (VMBO/LBO), 3 = higher high school (HAVO/VWO), 4 = lower professional education (MBO 1), 5 = professional education or higher (MBO 2, HBO, WO). [f]0 = non-Dutch *$p < 0.05$; **$p < 0.01$; ***$p < 0.001$; ****$p < 0.10$

$p = 0.016$; career control: $B = 0.14$, t (712) = 3.83, $p = 0.000$), supporting *H2* and *H3*. A test of the direct relationships of self-profiling and career control with informal learning (Table III, model 1) showed that career control was significantly related to informal learning ($B = 3.96$, t (712) = 3.04, $p = 0.0025$) and supported *H1a*, whereas self-profiling was only marginally related to informal learning but in the right direction ($B = 2.45$, t (712) = 1.72, $p = 0.087$), which only shows marginal support for *H1b*.

Mediation was inferred from the significance of indirect effects using bootstrapping (Hayes, 2009). Hayes (2009) notes that a significant indirect effect can be detected even though an independent variable and a dependent variable are not significantly associated, as is the case in this study for self-profiling and informal learning.

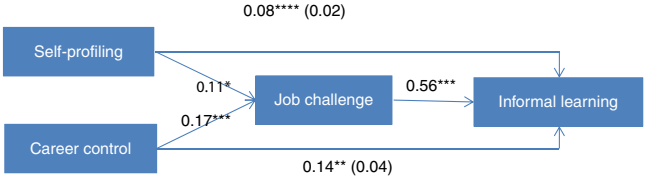
Indirect effects were computed for each of 5,000 bootstrapped samples as well as a 95 percent confidence interval. The bootstrapped unstandardized indirect effects were 1.89 and 2.72 for self-profiling and career control, respectively. The lower and upper confidence interval values ranged from 0.33 to 3.43, and from 1.35 to 4.16. Because these values do not include zero, the indirect effects were statistically significant. Moreover, Figure 2 shows that the direct path coefficients between the independent variables and informal learning are low and non-significant after inclusion of job challenge as mediator, indicating full rather than partial mediation. Therefore, *H4a* and *H4b* were partially supported.

Discussion

This study examined factors that contribute to the development and informal learning of TAWs in low-skill jobs, which, to date, has received very little attention. We developed and tested the proposition that self-profiling and career control of TAWs in low-skill jobs would relate to job challenge and, consequently, to informal learning on-the-job. As expected, we found that both self-profiling, although marginally significant, and career control were positively related to informal learning and that these relationships were fully mediated by job challenge when controlling for several demographic factors. Apparently, TAWs who self-promote their skills and achievements and plan their career learn more in their jobs because they are more engaged in challenging activities.

Empirical and theoretical contributions

These findings corroborate recent research that showed that career motivation was positively related to informal workplace learning activities (Van Rijn *et al.*, 2013) and underlines that informal learning at work depends on individual actions and career adaptability capacities and skills (Brown *et al.* 2012). Apparently, employees who are motivated to advance their careers and have the career competencies and adaptability to do so will learn more in their jobs.



Notes: Coefficients in parentheses refer to the path when job challenge is included in the model. *p<0.05; **p<0.01; ***p<0.001; ****p<0.10

Figure 2.
Mediation model with standardized path coefficients

Our finding that job challenge is positively related to informal learning among TAWs corroborates research that found a positive relationship between job challenge and on-the-job learning among "general" employees and managers (e.g. DeRue and Wellman, 2009; Dragoni *et al.*, 2009; Lyness and Thompson, 2000; McCauley *et al.*, 1994; Preenen *et al.*, 2011). Note that we measured informal learning as the percentage of time spent on informal learning tasks, whereas informal learning is usually assessed in a more generic way (e.g. Preenen *et al.*, 2011). Hence, this study provides some initial evidence that job challenge seems to be positively related to informal learning, irrespective of job position and the type of measures that are used.

From a broader perspective, our study makes several contributions to the job challenge, informal learning and career literature. First, although research on informal learning among other employees has received a lot of attention (e.g. Dong *et al.*, 2014; McCauley *et al.*, 1994; Preenen *et al.,* 2011), this is lacking in regard to TAWs in low-skill jobs, perhaps because these employees are difficult to involve in research (Visscher, 1997), or may be because researchers have just not been very interested in this group. Filling this research gap is significant though because TAWs are a growing but vulnerable group, for whom informal learning at work is especially important because they so often lack opportunities for formal learning. Moreover, in general, research on the relationship between career competencies, job challenge and informal learning is lacking. In fact, though called for, empirical knowledge about individual factors that influence the amount of job challenge and informal learning employees experience in their jobs is limited (Preenen *et al.*, 2014a, b). By connecting several research streams and showing that self-profiling and career control competencies are related to the job challenge and informal learning of TAWs in low-skill jobs, our study has filled some gaps in the job challenge, informal learning and career competencies literatures.

More specifically, we argued and showed that both self-profiling and career control are positively related to job challenge and informal learning. To date, research about individual predictors of job challenge and informal learning experiences at work is sparse (Preenen *et al.*, 2014a, b). Only recently have researchers begun to pay attention to individual determinants (e.g. De Pater *et al.*, 2009b; Preenen *et al.*, 2014a, b) and processes (Preenen *et al.*, 2011) of job challenge and developmental work experiences. Our findings and theoretical reasoning advances our knowledge of these issues. Individual factors, such as career competencies, seem important predictors of the amount of challenge and learning experiences employees have in their jobs. Supervisors and intermediaries may assign more challenging tasks to TAWs who self-profile because they are perceived as more competent and willing. Moreover, TAWs who report high-career control may pursue or create more challenging assignments and activities at work that go further than their regular tasks and jobs to develop their skills, which helps them in meeting their career goals.

Although it was not the main aim of this study to test Akkermans *et al.* (2013a) full model of career competencies, we both proved and explained why two career competencies matter for career relevant behaviors. Therefore, we believe that we provided some theoretical and empirical support for the importance of career competencies in career development (Heijde and Van Der Heijden, 2006), not only for employees in high-skill jobs, but also for those in low-skill jobs. Additionally, we extend findings that demonstrated the positive consequences of career competencies for career relevant individual employee work outcomes, such as (perceived) employability (Akkermans *et al.*, 2013a) and work engagement (Akkermans *et al.*, 2013b). Career competencies indeed seem to matter for career relevant behaviors.

Finally, although we found a positive relationship between self-promotion and informal learning, it has been argued and found that self-promotion does not necessarily produce positive outcomes (Higgins *et al.*, 2003). People use self-promotion tactics to present themselves in the most favorable and competent light with the aim of causing evaluators to attribute positive characteristics to them (Judge and Bretz, 1994). However, too much self-promotion may be perceived as cocky, annoying or threatening to others and thereby induce counterproductive effects. It has been noted that when claims of competence can be easily refuted the chances of achieving success are likely to be diminished (Higgins *et al.*, 2003). Hence, self-promotion statements should be based on reliable, long-term verifiable statements. But because it is harder to refute or verify statements in situations where employees are only working for a short period of time, self-promotion statements may actually be most effective when used by employees like TAWs in low-skill jobs. Future research may examine this and other moderating variables of the outcomes of self-promotion.

Limitations and suggestions for future research. Like with any research, we should acknowledge some limitations of the present study. First, we relied only on employees' self-reports to assess our study variables. This use of a single source and method may have led to common method bias (Podsakoff *et al.*, 2003). Additionally, the use of self-reports as indicators of the objective environment may decrease measurement accuracy (Spector and Jex, 1991) but there is also considerable evidence that perceptual measures do reflect the objective environment (Spector, 1992). In this study, we conducted confirmatory factor analyses that showed that our measures were independent yet interrelated constructs. Therefore, we believe that the use of self-reports in our study has not severely limited the validity of our findings. However, future research may include supervisors' or peers' observations of employee career competencies, job challenge and learning.

A second possible limitation relates to the cross-sectional design we used, which cannot provide conclusive evidence of causal and mediating relationships. Although the positive relationship between job challenge and informal learning has been well established (e.g. DeRue and Wellman, 2009; Preenen *et al.*, 2011), the suggested positive relationship between self-profiling and career control and job challenge and learning has been less theorized and investigated. Even though career competencies are generally seen as predictors of work and career behaviors (e.g. Akkermans *et al.*, 2013a, b), it could instead be argued that informal learning and job challenge enhance self-profiling and career control. For example, employees who perform more challenging tasks and learn from them may feel more confident in engaging in self-profiling activities and setting career goals. Future research could include field experimental and longitudinal designs to investigate the causal directions in these relationships.

Third, for practical reasons we measured informal learning with only one item. A psychometric shortcoming of single-item measures is that they cannot yield estimates of internal consistency reliability (Wanous *et al.*, 1997). They are, however, frequently used in organizational behavior research (e.g. Preenen *et al.*, 2011). Several studies have compared single item to multiple-item measures for concepts such as attitudes, beliefs and perceptions about work (Gardner *et al.*, 1998; Wanous and Hudy, 2001; Wanous *et al.*, 1997) and reported satisfactory correlations between the measures. Our single-item measure of informal learning has been used in prior research (e.g. Borghans *et al.*, 2011) and it correlated with job challenge similar to other studies that measured informal learning

differently (Preenen *et al.*, 2011). However, all in all, a single-item measure is generic and does not allow for the measurement of different facets of informal learning. Hence, future studies should include more extensive measures and scales of informal learning.

Finally, due to the necessity of using a shorter questionnaire to ensure a high-response rate, we only investigated two career competencies (self-profiling and career control) from the model of career competencies by Akkermans *et al.*, (2013a, b), and we assessed career control with two items instead of the original four. Future research should include all behavioral, communicative and reflective career competencies.

Furthermore, we can identify some other issues for future research. One underlying goal of our research was to investigate factors that can help TAWs to achieve more stable and higher-level jobs. Our study suggests that self-profiling and career control could enhance job challenge and informal learning experiences. This may empower TAWs in their careers as these factors have been widely found to stimulate career success and promotability (e.g. De Pater *et al.*, 2009a; Lyness and Thompson, 2000; Taylor, 1981), higher-inner work standards (Berlew and Hall, 1966) and ambition for higher-level positions (Van Vianen, 1999). We did not, however, actually investigate their impact on these career outcomes. Future studies could, for example, focus on investigating the effects of career competencies, job challenge and informal learning of TAWs in low-skill jobs on outcomes such as longer-term or permanent contracts, salary raises, job promotions or job changes or chances of (un)employment.

Another possible outcome that could be explored is employability, which is conceptualized as "a form of work specific, active adaptation that enables workers to identify and realize career opportunities" (Fugate *et al.*, 2004, p. 16). Employability can facilitate movement between jobs both within and between organizations (Morrison and Hall, 2002) and enhances the likelihood of gaining reemployment for vulnerable groups of employees such as the long-term unemployed (Koen *et al.*, 2013). Hence, it might be interesting to investigate the effects of self-profiling and career control on employability among TAWs in low-skill jobs.

Interestingly, we found that non-Dutch respondents reported more self-profiling and informal learning than Dutch respondents. Perhaps non-Dutch employees learn more because they have to adjust to the Dutch working culture and they self-promote themselves more because they feel that otherwise employers may not recognize them. Future research could further explore the specific role of nationality in the relationship between self-profiling and informal learning.

Practical implications. Many TAWs in low-skill jobs do not obtain better work or more employment security (Autor and Houseman, 2005). In general, temporary workers are less satisfied with their jobs due to a lack of job security and control over their jobs (Aletraris, 2010), experience greater income volatility and face a higher-unemployment risk (Segal and Sullivan, 1997). Due to shortages of qualified labor, equality considerations and compensation for higher mobility (Voss *et al.*, 2013), the importance of the development of vulnerable TAWs is gaining attention (e.g. Van Wijk *et al.,* 2013, 2014) and has been acknowledged by the European Social Partners in the temporary agency work sector (Eurociett and UNI Europa, 2009). Although our findings need further testing, they are backed up by theory and other empirical evidence. Therefore, we believe it is warranted to infer some practical implications that can benefit the vulnerable group of TAWs in low-skill jobs.

First, hiring companies and temporary work agencies could stimulate and train TAWs' self-profiling and career control competencies in order to improve their

job challenge, informal learning and other positive work behaviors and attitudes (Akkermans *et al.*, 2013a, b). These competencies can be shaped to some extent by focussed training and interventions (e.g. Akkermans *et al.*, 2014; Koen *et al.*, 2012). Investments in training are good for temporary workers and organizations alike because they contribute to an effective employment relationship (Chambel and Sobral, 2011). However, investment in the training and development of TAWs is generally low (Finegold, *et al.*, 2005; van Wijk *et al.*, 2013). This seems especially the case for TAWs in low-skill jobs, probably because they are often only hired for short time periods for which the investment might not be regarded as worthwhile. Hence, the responsibility for training career competencies to develop TAWs may rather lie in the hands of the temp agencies that have a longer-term relationship with the TAWs. Additionally, they may benefit from both the enhanced marketability of their TAWs as well as their improved relationships with them.

Second, in line with a wealth of other research (e.g. DeRue and Wellman, 2009; Dragoni *et al.*, 2009; Lyness and Thompson, 2000; McCauley *et al.*, 1994; Preenen *et al.*, 2011), we show that job challenge is important for informal learning among TAWs in low-skill jobs, which is broadly recognized as the most important type of learning within organizations (e.g. Clarke, 2004; Yeo and Marquardt, 2010). Job challenge has been associated with many positive outcomes, such as intrinsic work motivation (e.g. Csikszentmihalyi, 1990), job satisfaction (e.g. Judge *et al.*, 2000), organizational commitment (e.g. Dixon *et al.*, 2005) and future job performance (e.g. Taylor, 1981). Temporary work agencies and hiring companies could consider assigning challenging roles and assignments to TAWs, which may also be a good alternative to expensive formal training and education programs (McCall, 2004; McCall *et al.*, 1988; Morrison and Hock, 1986). Developing TAWs through job challenge and informal learning may therefore be particularly suitable for the hiring companies, who most influence the tasks and role contents of TAWs, but invest less in formal training programs for TAWs in low-skill jobs.

Hiring organizations can enhance job challenge by enriching jobs through adding a certain amount of difficulty, novelty, job autonomy and task variation (Preenen *et al.*, 2014b). In addition, TAWs may be stimulated to perform certain extra-role behaviors beyond their formal job and role requirements (Bateman and Organ, 1983), such as helping and coaching coworkers, replacing supervisors and solving problems at work. In fact, such extra-role behaviors are perhaps could be a practical way to increase the job challenge and development of TAWs in low-skill jobs, because their formal jobs and tasks may provide little room for this.

To conclude, although employers can influence employee careers, employees today still have to be the designers of their own careers (King, 2004; Sullivan, 1999) and have to become self-directed in obtaining a variety of work experiences and knowledge through learning (Bird, 2002; Sullivan *et al.*, 1998). The frequency of layoffs in the current crisis requires perhaps even more that employees in general and the vulnerable TAWs in low-skill jobs in particular, demonstrate their career competencies, control their careers and seek developmental work experiences to better prepare themselves for an uncertain career future.

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Note

1. Although CFA experts advise using three indicators per factor, the absolute number for CFA models with two or more factors is two indicators per factor if samples are large enough (Kline, 2011).

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