

Master Thesis



**Factors predicting Dutch Fire Brigade officers'
career mobility intentions:**

An empirical exploration

by

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Preface

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Abstract

This study examines factors influencing career mobility intentions of Dutch Fire Brigade officers. The data from 276 Fire Brigade officers showed that career mobility intentions among Dutch Fire Brigade officers are low. The Dutch Fire Brigade officers perceive the Fire Brigade sector as a nice and comfortable organization to work for. Therefore, learning experiences are scarce. These findings raise important issues regarding learning in the Dutch Fire Brigade sector and the employability of Dutch Fire Brigade officers. The paper ends with a discussion of findings and offers recommendations which can help to increase officers' career mobility. By focusing on career mobility intentions, this study contributes to science and practice in several ways. First, this study extends the existing literature on career mobility and career mobility intentions. Second, the study contributes to the discussion on how career mobility can benefit organizations as well as individual employees. Moreover, the study pioneers examination of careers in such a unique sample as the Dutch Fire Brigade sector.

Key words: career mobility intentions, Dutch Fire Brigade sector, Fire Brigade officers, intelligent career investments, individual factors, person-environment factors, organizational factors..

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1. Introduction

A growing body of literature emphasises the positive effects of career mobility for both organisations and employees (Somaye et al., 2008). For organizations, career mobility facilitates inter- and intra-organizational exchange of knowledge in organizations, contributing to organizational learning (Lam and Lundvall, 2004). For employees, career mobility contributes to developing transferable skills (Arthur and DeFillippi, 1994; Bird, 1994), which in turn contributes to employees' employability (Arthur, DeFillippi, and Jones, 2002). However, despite of these challenges that require career mobility and the advantages that it can give organizations, most organizations are still very traditional when it comes to career mobility (e.g. Baruch, 2006). An example of such an organization is the Dutch Fire Brigade. When there isn't a fire alarm going off, the Fire Brigade sector consists of organizations like all the rest. However, when an alarm does go off they change to strictly organized, oiled machines with a very hierarchical structure. Within the Fire Brigade sector, there are 15 ranks. The current study focuses on higher ranks, namely Fire Brigade officers. To become a Fire Brigade officer, an education at the fire academy of the Dutch Institute of Physical Safety (NIFV) needs to be taken. Fire Brigade officers can have different functions. However, the content of the function will consist one or more of 5 activities: proaction; prevention; preparation; repression; and/or follow up care. Within the Fire Brigade sector there is a "warm" and a "cold" side. The "warm" side takes care of the actual fire-fighting and calamity suppression. Proaction, prevention, and preparation are taken care of by the "cold" side. According to Lubberman and Bouwmeester (2000), who examined the Dutch labor market for Fire Brigade officers, there are several reasons why there will be an increasing demand for more mobility within the Dutch Fire Brigade sector and among Fire Brigade officers in the near future.

First, because of regionalisation, the demand for professional Fire Brigade officers will increase. In the Netherlands there are about 27.000 firemen and –women in a rank. Most of them are volunteers; about 5.400 are professional firefighters (CBS, 2008). Officially, the local municipality is in charge of a fire brigade. However, the fire brigades do work together in regions to support each other in case of a big fire or another calamity. In the Netherlands, there are 25 Fire Brigade regions. To take calamity suppression a step further, on July 30th 2007 the Dutch government introduced a law on establishing safety-regions. In these regions, which are the same 25 as the Fire Brigade regions, the municipalities, the Fire Brigade, the Police, and the medical aid work together to improve calamity suppression and crisis management. A safety-region has a few goals (www.brandweer.nl). First, it needs to protect civilians against risks. Second, it needs to offer better aid and follow up care in case of a fire, a heavy accident, and/or a crisis. Third, it needs to improve

the cooperation between the emergency services through coherent policies. And fourth, a safety-region needs to strengthen the managerial and operational impact pressure. Today, not all fire brigades are organized in regions. However, according to the 'Fire Brigade statistics 2007' (CBS, 2008), the regional brigades are more than 8 times as big as in 2000. Therefore, it is expected that within a couple of years the whole Fire Brigade sector will be organized in regions. The amount of fire brigades that have at least 4 professional firemen and –women has already increased from 15 percent in 2000 to 44 percent in 2008. At the same time there is now only 10 percent of the fire brigades that work with only volunteers. This percentage was 38 percent in 2000 (CBS, 2008). Therefore, there will be an increasing demand for professional Fire Brigade officers.

Besides the need for professionalization because of regionalisation, there is limited run through at the top and there is mutual competition between fire brigades in the Netherlands. Internal run through is the most common used recruitment policy for professional Fire Brigade officers (Lubberman and Bouwmeester, 2000). However, according to 62 percent of the fire brigades, it is almost impossible for officers to run through to other Fire Brigade officers' functions. The reason for this is that there is limited run through at the top. Lubberman and Bouwmeester (2000) also found that when Fire Brigade officers do leave, they either leave to work for another fire-brigade (53 percent) or because of retirement out of the labor process (25 percent). Only 4 percent left to work for an organization in another sector. And none of the officers that were questioned preferred a career elsewhere. All these results indicate that there isn't much mobility within the Fire Brigade sector and also to organizations outside the sector (e.g. Den Boer and Hövels, 2005).

Finally, on the supply side, over half of the fire brigades indicate that they find it extremely difficult to fill-in vacancies (Lubberman and Bouwmeester, 2000). This is even truer for the regional fire brigades (73 percent). The two most mentioned causes for this are: the job-applicant not having the right qualifications (19 percent); and too few reactions to vacancies (17 percent).

These reasons indicate that career mobility is needed in the Fire Brigade sector. However, former research indicates that there isn't much mobility. As stated before, the research group of this study will be Fire Brigade officers. To make a start in the research on the lack of mobility within the Fire Brigade sector, career mobility intentions of Fire Brigade officers will be examined. Therefore, the research question of this thesis is:

Which factors predict Fire Brigade officers' career mobility intentions?

The factors that are examined exist on three levels: the individual level; the person-environment level; and the organizational level. These levels are chosen to try to give a complete view of the career mobility intentions of Fire Brigade officers. Following the three levels of factors the sub research questions are:

1. *How and under which conditions will individual factors predict career mobility intentions?*
2. *How and under which conditions will person-environment factors predict career mobility intentions?*
3. *How and under which conditions will organizational factors predict career mobility intentions?*

The study further suggests that individual decisions about their career development will shape individual career mobility intentions. We suggested that individual career decisions can be conceptualized in terms of individual investments in three ways of knowing: knowing why; knowing how; and knowing whom (Arthur, Claman, and DeFillippi, 1995). We argue that individual decisions about investments in the 3 ways of knowing are shaped by personal factors, person-environment factors, and organizational factors as a part of the individual sense-making process. Thus, investments in the 3 ways of knowing will offer more opportunities for psychological mobility. So, the final sub research question is:

4. *How and under which conditions will intelligent career investments mediate the relationship between three sets of antecedents and career mobility intentions?*

The expected mediating relationship of intelligent career investments will be discussed more elaborately in the next chapter when existing literature on the topic is discussed.

Following the research question and sub questions, the research model is depicted in figure 1. In the following chapter, the research model will be operationalized using existing literature on the several topics. After that, the method that was used in conducting the research will be explained. Then, the results will be given and their meaning will be discussed. Also, limitations are discussed and recommendations for future research are given. In the latter part of this document, references are listed.

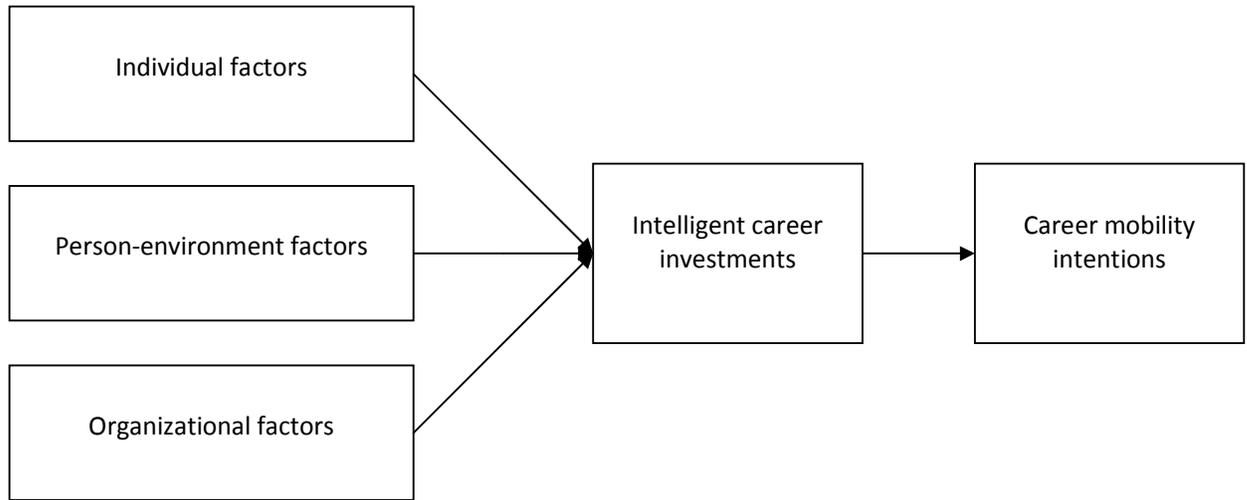


Figure 1: The research model guiding the study

2. Literature review and hypotheses

In this chapter, the research model will be operationalized using existing literature. First, the dependent variable 'career mobility intentions' is explained, its definition is given, and the usage in the research is explained. Then, individual factors; person-environment factors; organizational factors; and intelligent career investments will be discussed. Furthermore, hypotheses based on the literature are stated. These hypotheses will be tested using measurements that are explained in the method chapter.

2.1 Career mobility intentions

Sullivan and Arthur (2006) made a distinction between physical and psychological mobility. Physical mobility is the transition across boundaries, whereas psychological mobility is the perception of people to make that transition. In existing literature, an emphasis is placed on physical mobility. Sullivan and Arthur (2006) gave two possible reasons for this emphasis. First, career literature used to explain mobility in physical terms. Second, physical mobility might be easier to measure (Briscoe, Hall, and Frautschy DeMuth, 2006). Sullivan and Arthur (2006) argued that because of this emphasis, the versatility of career models isn't always acknowledged. Recently however, with the emergence of new career models, there has been more attention for psychological mobility (Feldman and Ng, 2007). Therefore, psychological mobility will be the focus of this research. The concept is labelled here as 'career mobility intentions'. Intentions capture motives that influence actual behavior (Ajzen, 1991). These motivational factors indicate how hard individuals are willing to try to perform a specific behavior, in this case career mobility behavior. Generally, the stronger the intentions the more likely it is that the behavior will occur (e.g. Ajzen, 1991; Sousa-Poza and Henneberger, 2005; Crossley, Bennet, Jex, and Burnfield, 2007).

So, career mobility intentions refer to the intentions to leave the current job and actively look for another job. Therefore, job turnover intentions but also job search behavior will be examined. On these topics, there is a considerable amount of research (e.g. Belzil, 1996; Schettkat, 1996; Veum 1997). Job turnover intentions reflect the subjective probability that an individual will change jobs (Sousa-Poza and Henneberger, 2005). Job search behavior is often associated with job turnover intentions (e.g. Hartog, Mekkelholt, and Van Ophem, 1988; Van Hooft, Born, Taris, Flier, and Blonk, 2004). It indicates the extent to which individuals actually perform activities to change jobs.

As was discussed in the introduction, this research examines three antecedents of career mobility intentions: individual factors; person-environment factors; and organizational factors. These antecedents will be discussed below.

2.2 Individual factors

Individual factors and their relationship with career mobility intentions will be examined using measures of personality and career orientation. Personality and career orientation will be explained further below.

2.2.1 Personality

The relationship between personality traits and career success has already been established (Seibert and Kraimer, 2001). Also, in previous research, personality and personal style differences have been used to explain the motivation of individuals to seek new career opportunities (Feldman and Ng, 2007; Ng et al., 2007). In this research, the relationship between personality traits and career mobility intentions is examined.

Personality is the set of psychological characteristics that determine the affective, behavioral, and cognitive style of an individual (Mount, Barrick, Scullen, and Rounds, 2005). They show who we are and help to explain our behavior. These characteristics remain stable over time. Traditionally, average careers showed substantial continuity (e.g. Holland, Sorensen, Clark, Nafziger, and Blum, 1973; Gottfredson, 1977). Although stable careers won't be the norm in the future, individuals will keep searching for occupations that fit with their dominant interests (Holland, 1996). Interests are long-term traits that influence behavior through preferences for environments, activities, and types of people (Mount et al., 2005). These interests stay stable over time and become more stable with age. Holland, Fritzsche, and Powell (1994) imply that interests are closely related to aspirations and also to other influences. Examples of those influences are: the linkage between the typologies of individuals and environments (Holland, 1997); life histories; heredity; and the Big Five personality variables. The latter will be used to explain personality type in this research, since the Big Five is the most widely acknowledged measure of personality traits (Seibert and Kraimer, 2001).

The Big Five variables are the dimensions of normal personality. They are acknowledged as valid personality factors in several research fields (e.g. Goldberg, 1992). The dimensions are: neuroticism; extraversion; openness to experience; agreeableness; and conscientiousness (Mount and Barrick,

1995; Seibert and Kraimer, 2001). Neuroticism refers to adjustment versus emotional stability. Neurotic individuals score high on anxiety, self-consciousness, and have a higher chance of getting a depression. Emotional stability, on the other hand, is described as the ability to cope with stress (Komarraju and Karau, 2005). Extraversion refers to social, active, and energetic individuals (Digman, 1990). A low score on extraversion indicates reservedness, task-orientedness, and introvertness. Individuals that are open to experience are usually called curious and constantly on the look for new experiences and ideas. Words that are used to describe them are imaginative, intellectual, and artistically sensitive. Agreeableness is the interpersonal orientation of an individual expressed in corporation, consideration, and trust. Conscientious individuals are dependable, organized, and persistent in goals-directed behavior. These individuals are oriented towards achievement.

Given the previous definitions and former research on the Big Five personality traits and career mobility opportunities (Feldman and Ng, 2007; Ng et al., 2007) and career success (Gelissen and De Graaf, 2006), it is predicted that:

H1: The relationship between the Big Five variables and career mobility intentions is significant in such a way that extraversion (H1a), openness to experience (H1b), and conscientiousness (H1c) will be positively related to career mobility intentions, whereas neuroticism (H1d) and agreeableness (H1e) are negatively related to career mobility intentions.

2.2.2 Career orientation

The other measure of individual factors is career orientation. To examine the strengths and weaknesses of the career orientation of individuals, Briscoe and Hall (2006) used the boundaryless career and protean career concepts. These concepts are frequently used in today's literature. They are especially useful since they describe new career trends as more uncertainty, less loyalty, and greater mobility (Capelli, 1999). The concepts will be discussed more elaborately below.

The boundaryless career

Traditionally, careers were long-term- relationships between an employee and the organization. The desirable, and usual, development was one of an employee serving the organization for his entire working life. Advancement occurred hierarchically, in a single organization (Eby, Butts, and Lockwood, 2003), and upward mobility became the parameter of career success. Because of downsizing, restructuring, and subcontracting, career models changed and have become

boundaryless (Askenas, Ulrich, Jick, and Terr, 1995; Jones and DeFillippi, 1996). According to the boundaryless career concept, careers can take any form and can go beyond traditional, organizational boundaries (Arthur and Rousseau, 1996). Another characteristic of the concept is that careers are no longer bound to a single organization (Goffee and Jones, 2000). The main characteristic of a boundaryless career is that the individual chooses what direction will be taken in his or her career. So, the individual manages his own career. The boundaryless career concept discusses the various career possibilities, how to take advantage of these possibilities, and how this can lead to career success (Arthur, Inkson, and Pringle, 1999). The shift to boundaryless careers is apparent in the change of psychological contracts. Organizations should offer opportunities for development in stead of offering secure employment for all the employees (Rousseau, 1996; Herriot and Pemberton, 1995). Individuals have less organizational commitment and more multiple commitments (Baruch, 1998). Examples of those multiple commitments are: commitments to the industry or sector; the occupation and professional association; region; religion; support groups; family; and the organization (Parker and Arthur, 2000).

The protean career

The protean career concept argues that careers are driven by the values of an individual and therefore stresses that individuals should direct their career themselves (Briscoe and Hall, 2002). Individuals set goals, including in the family life, and success is defined in psychological rather than objective terms (e.g. salary, status). So, it's not the organization any longer that is responsible for the careers of its employees (Hall, 2002). A protean career can be seen as an individual orientation and can be depicted on a continuum rather than an either or scale. So, it's not about actual mobility but rather an attitude about self-direction, freedom, and making choices based on individual preferences. When an individual has such an attitude, this will result in a sense of calling which the individual experiences in his or her work (Hall and Chandler, 2004). Sense of calling is important to look at when examining the Fire Brigade sector since saving people and animals is stated in the mission statement of the Fire Brigade. Therefore, this topic will return in the section on person-environment factors.

As stated before, with the emergence of new career models there is more attention for mobility. The two models that are used here are the boundaryless and the protean career. Both concepts are used to explain how individuals can be more mobile in their career (Capelli, 1999). Therefore, when an individual has a boundaryless or protean career focus, this will most likely increase their career mobility intentions. Therefore, it is predicted that:

H2: The relationship between career orientation and career mobility intentions is significant in such a way that boundaryless career attitude (H2a) and protean career attitude (H2b) are positively related to career mobility intentions.

2.3 Person-environment factors

The second antecedent of career mobility intentions that will be measured is person-environment factors. The interaction that an individual has with his or her environment can be of influence on career mobility intentions (e.g. Feldman and Ng, 2007). In this research, environment is explained in terms of the Fire Brigade sector. Interaction with the Fire Brigade sector will be explained using identity theory.

Social identity theory argues that individuals form identities through several reference groups (Johnson, Morgeson, Ilgen, Meyer, and Lloyd, 2006). As was stated in the previous section, individuals can have multiple commitments, for example with the industry in which they work; their occupation/profession; or the region in which they live or work. Therefore, an individual holds multiple identities. Like having multiple identities, an individual can identify with several groups. First, an individual can identify with the organization. Organizational identification is the feeling of an individual that he or she 'belongs' to the organization (Mael and Ashforth, 1992). For example, individuals will describe themselves in terms of their membership of the organization (Mael and Ashforth, 1992). Individuals can also identify with certain groups within the organization (Ashforth and Johnson, 2001). For example, Bergami and Bagozzi (2000) found that soldiers had a strong identification with their unit. Recently, greater attention has been paid to occupational and professional identity where individuals identify themselves with work-groups outside the organization. According to Ashforth and Johnson (2001), individuals identify more with groups that are proximate than with groups that are distant. Van Knippenberg and van Schie (2000) offer two reasons for this. First, since individuals want to be distinctive from others, they are more likely to identify with workgroups. This because workgroups will make individuals feel connected but not overwhelmed by a group identity. Hogg and Terry (2001) make a similar point by arguing that individuals will identify with groups that will reduce uncertainty and give them self-esteem. Second, individuals are likely to have more in common with individuals in their workgroup than with other individuals in the organization. Ashforth and Johnson (2001) discuss a third reason, which is that organizational structures are changing and becoming more organic. This increases teamwork and will lead to more investment from individuals in workgroups. This will increase workgroup identity.

Naturally, when an individual identifies highly with his or her organization, in this case the Fire Brigade sector, he or she will be less likely to seek employment elsewhere. Two other, very specific, concepts for the Fire Brigade sector are the influence of family and a sense of calling. Being a fireman is a profession that was, and sometimes still is, passed on from generation to generation. When this is the case, one can imagine that the individual won't seek for employment outside the Fire Brigade sector. Sense of calling was already mentioned in a previous section. When an individual joined a fire brigade to save people and animals, he or she will be less likely to ever leave the Fire Brigade sector. Considering all this, it is predicted that:

H3: The relationship between identification and career mobility intentions is significant in such a way that identification with the Fire Brigade sector (H3a), influence of family (H3b), and a sense of calling (H3c) are negatively related to career mobility intentions.

2.4 Organizational factors

The third antecedent that is used to explain career mobility intentions is organizational factors. Baruch (2006) argued that, although there is more attention for the self-management of individuals, the traditional model of careers still applies, especially in the public sector. He argued that there are two extremes; the organization or the individual in charge. And where there is a shift towards the individual in charge, the organization still holds a significant amount of control over the careers of individuals. An example of this is that, because of all the changes in the world today, employees need more training and development in their careers. Here, there is still a role for organizations. Therefore, also organizational factors will be taken into account in the current research. This will be done using career sponsorship and human resource arrangements.

2.4.1 Career sponsorship

Ng, Eby, Sorensen, and Feldman (2005) used organizational sponsorship as one of four factors that can lead to career success. Organizational sponsorship is the extent to which an organization offers support to employees to obtain career success. There are several types of support: career sponsorship; supervisor support; training and skill development; and resources. This research will focus on career sponsorship. Career sponsorship refers to the amount of support that is given to the individual by senior-members of the organization. A supervisor can help to develop the career of an individual by providing exposure and visibility to others in the organization, provide challenging work,

and provide protection. Social support is offered in the form of increasing one's self-worth and counsel.

One can imagine that when an individual receives challenging work, protection, and social support, he or she will be less likely to leave (and think about leaving) the organization. Therefore, it is expected that:

H4: The relationship between career sponsorship and career mobility intentions is significant in such a way that it is negatively related to career mobility intentions.

2.4.2 Human Resource arrangements

In a Dutch report, career policies of fire brigades were examined (Nauta, Winthagen, and Stark, 2005). Career policies will make sure that employees work on their employability and development. Examples of career policies are: regular training or schooling; the possibility to work in a team; and the possibility to make promotion (Kooij, not published yet). Good career policies can increase the likelihood of making a career step regularly and may also create a favourable attitude towards mobility (Nauta et al., 2005). In this research, a distinction is made between knowledge of the HR-arrangements that are present and the usage of those arrangements. Both are predicted to be positively related to career mobility intentions. So, it is expected that:

H5: The relationship between human resource arrangements and career mobility intentions is significant in such a way that the presence of HR-arrangements (H5a) and the usage of HR-arrangements (H5b) are positively related to career mobility intentions.

2.5 Intelligent career investments

Today, career paths are formed by a sequence of job opportunities that can go beyond traditional organizational boundaries (DeFillippi and Arthur, 1994). Key elements that are necessary for an individual to effectively manage his or her career are described by Arthur et al (1995). They introduced the concept of intelligent careers. Preliminary to intelligent careers are core competencies of an organization, which result in competitive advantage (Arthur et al., 1995). First, there is the culture of an organization. Culture includes the values and beliefs of how the organization does business. It also embraces how it seeks to influence the identification and behavior of its employees. Second, there is the organization's know-how. Know-how consists of the performance capabilities of a firm. These include, among others, the skills and knowledge of

employees. And finally, the networks an organization has. Networks are the interpersonal relationships through which the organization gets resources to conduct value-creating activities. Intelligent career investments are drawn from organizational competencies and their strategic implications (DeFillippi and Arthur, 1994). For each area of organizational competency, is an area of personal investment (Arthur et al., 1995).

Knowing why relates to the culture area of organizational competencies. It's the nature and extent to which an individual relates to the culture of the organization (Arthur et al., 1995). This also works the other way around; the corporate culture also influences the knowing why investment of an individual. Knowing why involves interests, motives and meanings why a career is pursued. It tries to answer the question 'why?' (DeFillippi and Arthur, 1994). It is also about choices regarding the balance between the working life and the personal life of an individual. Therefore, determinants of knowing why are: values; attitudes; internal needs; identity; and lifestyle (Baruch, 2004). New career models, like the boundaryless and protean career demand self-direction from individuals. Employees are encouraged to uncouple their identity from the organization and their job (Weick and Berlinger, 1989). Because of these greater demands, knowing why should be very clear. Therefore it's of critical importance to have a clear sense of career goals and personal values. Knowing how refers to the skills and knowledge of the individual and how the individual brings them to the overall know how of the organization (Arthur et al., 1995). It also involves the development of those skills and talents that are needed for career success. Traditionally, skills and talents were firm-specific. In the new career models, skills and talents should be transferable across occupations, organizations, and even industries. Practically, the 'knowing how' investment is usually reflected in job descriptions. The development occurs through performance appraisals and training (DeFillippi and Arthur, 1994). Knowing whom is the set of interpersonal relationships that can contribute to the network of an organization (Baruch, 2004; DeFillippi and Arthur, 1996). It is the link between all the actors in the current, but also any former, environments of an individual, like college contacts (Arthur et al., 1995). Networks are used to create social capital (DeFillippi and Arthur, 1996). Network activities of individuals can offer great benefits to the organization. First, networks can be a resource (Reed and DeFillippi, 1990). Second, networks can be a repository for reputation that can result in new business (Lado, Boyd, and Wright, 1992). Finally, networks can be a learning source (Powell, 1990). In the new model of careers, social capital is scattered across organizations and industries. Therefore, successive projects need to be developed to continuously evaluate relationships. Those that are unproductive need to be ended and those that enhance productivity should be enhanced.

According to DeFillippi and Arthur (1994), individuals should make investments in the 3 ways of knowing to search for employment settings in organizations that recognize the individual contribution and that provide opportunities. These employment settings are extended across organizational, occupational and industrial boundaries. Career investments can be used to cross these boundaries. According to Sullivan and Arthur (2006), individuals that invest in the 3 ways of knowing, have more opportunities for physical mobility and therefore also experience more psychological mobility.

In this study, it is expected that decisions about investments in the 3 ways of knowing are shaped by personal factors, person-environment factors, and organizational factors. These factors come together in an individual sense-making process about careers (Weick, 1995). In this process, an individual forms reality based on his or her interpretations (Drazin, Glynn, and Kazanjian, 1999). Individuals act on these interpretations of reality and shape their environment (Gioia and Pitre, 1990). Sense-making in careers is a condition to individual knowledge creation and maintenance (Weick, 1995). Weick (1995) discussed three levels on which sense-making can occur: the intra-subjective level; the inter-subjective level; and the collective level. The intra-subjective level is also referred to as the individual level (Wiley, 1988). This level argues that personality (Seibert and Kraimer, 2001; Judge and Ilies, 2002; Barrick, Mount, and Gupta, 2003) and career motivation (Noe, 1990; Kadushin, 2002) influence decisions about intelligent career investments. The inter-subjective level suggests that sense-making is shaped by social interaction with the environment (Drazin et al., 1999). Examples of inter-subjective sense-making are: communities of practice (Brown and Duguid, 1991); occupational communities (Van Maanen and Barley, 1984); and career communities (Parker, 2000). The collective level of sense-making is characterized by a system of shared and structured meanings, which is the definition of an organization (Weick, 1995). The three levels of sense-making influence the decisions an individual makes about investments in knowing why (see: Parker, 2000; Parker, Khapova, and Arthur, 2009), knowing how (see: Weick, 1996; Parker, 2000; Becker, 2004; Fugate, Kinicki, and Ashforth, 2004), and knowing whom (see: Hoegl, Parboteeah, and Munson, 2003; Ibarra and Deshpande, 2007).

So, individual decisions about one's career are formed by the three antecedents and exhibited in the 3 ways of knowing, which result in more career mobility intentions. Therefore, the final hypothesis is:

H6: The intelligent career investments 'knowing why' (H6a), 'knowing how (H6b), and 'knowing whom' (H6c) mediate the relationship between three sets of antecedents and career mobility intentions.

Now that the variables and hypotheses are known, the research model will be the following:

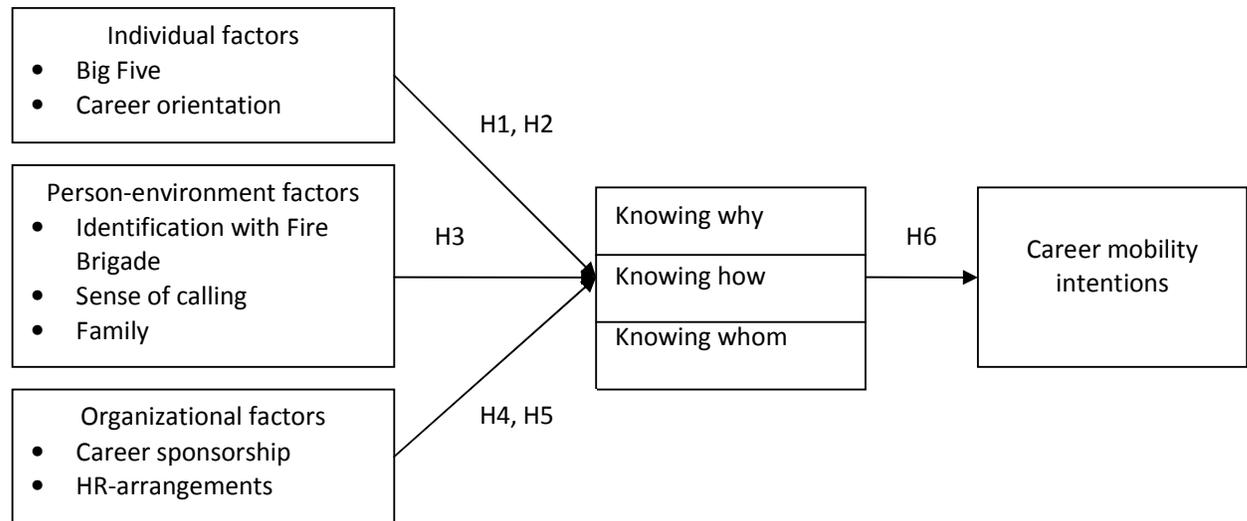


Figure 2: A more detailed, hypothesized research model

3. Method

In this chapter, the method that was used to test the hypotheses will be discussed. First, the sample and procedure will be explained. Second, the measures for all the variables will be given. And finally, the analysis of the results will be discussed.

3.1 Sample and procedure

Participants for this study are firemen that are educated to the level of Fire Brigade officer. To reach the focus group, the 25 safety-regions in the Netherlands were contacted by telephone. When there wasn't a safety-region established yet, the regional fire brigade was contacted. So, all the firemen within the focus group were reached. Therefore, the whole population was contacted instead of a sample. After the telephone contact, 16 regions agreed to participate in the study. To ensure privacy, the internet survey was mailed to one contact within the region. This contact sent the survey to all the firemen within their region that belonged to the focus group. The contacts were asked to send an email back reporting to how many firemen they have sent the survey. This was asked to see how many participants there actually were. Since some contacts asked third parties to send the survey to other Fire Brigade officers, it is impossible to know exactly to how many Fire Brigade officers the questionnaire was sent. The approximate number is 675. Since the survey was an internet questionnaire, answers were stored in an excel database. Therefore, participants didn't have to send anything back. They only had to press the "send-button" at the end of the questionnaire. Confidentiality was ensured. The questionnaire was divided into separate sections that included general questions (gender, race, education, etc.), and questions about career mobility intentions, the three ways of knowing, individual factors, person-environment factors, and organizational factors. To maximize responses, all respondents were entered into a drawing for a hot air balloon flight.

A total of 380 surveys from 15 safety-regions were returned, which yields a response of 56%. However, since the exact number of sent questionnaires isn't known, this number is not exact. To analyze the data, first the returned surveys were analyzed. The respondents that didn't get a Fire Brigade officers' education and were volunteers were removed from the data. Furthermore, incomplete data was removed. This reduced the number of participants to 276. In table 1, the response per region is depicted. The amount of returned surveys per region is too small to conduct a multi-level analysis to test the hypothesized model for every region. Therefore, all the data was analyzed together. We will return to this point in the chapter on limitations.

Table 1: Response per region

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Fryslan	15	5,4	5,6	5,6
	Drenthe	10	3,6	3,8	9,4
	IJsselland	25	9,1	9,4	18,8
	Twente	36	13,0	13,5	32,3
	Gelderland-Zuid	15	5,4	5,6	38,0
	Utrecht	34	12,3	12,8	50,8
	Noord-Holland Noord	21	7,6	7,9	58,6
	Zaanstreek-Waterland	10	3,6	3,8	62,4
	Kennemerland	7	2,5	2,6	65,0
	Amsterdam-Amstelland	4	1,4	1,5	66,5
	Hollands-Midden	16	5,8	6,0	72,6
	Midden- en West-Brabant	18	6,5	6,8	79,3
	Brabant-Noord	22	8,0	8,3	87,6
	Zuid-Oost-Brabant	13	4,7	4,9	92,5
	Limburg-Noord	20	7,2	7,5	100,0
	Total	266	96,4	100,0	
Missing	System	10	3,6		
Total		276	100,0		

For the demographic breakdown and general information on the respondents, frequency analysis was conducted. The results were as follows: 90% were male; average age was 43,4 years; 87% were either married or lived together, 13% were single; 99% were natives; 78% have children, with a mean of 2,2 children; more than half of the respondents (55%) has had Higher Vocational Education (HBO) as their highest education; and 43% has taken additional education, like a Master of Crisis and Disaster Management (MCDM), a radiological health and safety education, or other forms of higher management education.

Concerning their professional career: 57% conducted their Fire Brigade officers education part-time at the Dutch Institute of Physical Safety (NIFV), 37% conducted this full-time, the other 6% did their education as a full-time and part-time combination at the Dutch Institute of Physical Safety; 82% has active repressive duties which means they are part of the 'warm' side of the organization; on average

they had 19,6 years of working experience; 3 jobs outside as well as within the Fire Brigade sector; average years of working for their current employer was 9,2 years; average years of working in their current function was 4,6; and the two most common reasons why they would switch jobs were more interesting work (75%) and because they were asked (50%).

3.2 Measures

Career mobility intentions

Career mobility intentions were assessed using measures of job turnover intentions and job search behavior. Job turnover intentions were assessed with a 7-item scale, based on the 6-item scale developed by Wayne, Shore and Liden (1997). In the scale, "organization" and "company" were replaced with "safety-region". It was indicated that this was the region that the organization for which the participant worked for was directly or indirectly part of. Furthermore, the last item "as soon as I find a better job, I will leave this company" was split up in two items. These items were: "as soon as I find a better job outside the safety-region but within the working field of the Fire Brigade sector, I will change jobs"; and "as soon as I find a better job outside the safety-region and outside the working field of the Fire Brigade sector, I will change jobs". These last changes were made to measure the willingness of participants to work outside the current safety-region and outside the working field of the Fire Brigade sector. Participants were asked to indicate the extent of their agreement with the statements on a 5-point Likert scale ranging from strongly disagree to strongly agree. Furthermore, job search behavior was assessed with the 11-item scale developed by Van Hooft et al. (2004). One item, that was inappropriate to this specific context, was removed ("visiting job fairs"). Participants were asked to indicate the amount of time they had spent on active job search activities in the last 6 months. In the original measure, the time frame was 4 months. Agreement with the statements was measured on a 5-point Likert scale ranges from no time at all to very much time. Finally, career mobility intentions were assessed with a self-developed, 4-item scale. This scale measured the extent to which participants were willing to apply for a job when they were approached for it. A distinction was made between in- and outside the current safety-region and in- and outside Dutch Fire Brigade sector. For example, one item was "If I would be approached for a fitting job outside the current safety-region but within the working field of the Fire Brigade sector, I would apply for it". Response options ranged from strongly disagree to strongly agree (5-point Likert scale). Cronbach's alpha for the career mobility intentions scale was ,889.

Individual factors

Individual factors were assessed using measures of personality type and career orientation. Personality type was assessed using the Big Five variables. These variables are the most frequently used in research on personality (Seibert and Kraimer, 2001). Extraversion, conscientiousness, neuroticism, agreeableness, and openness were measured using Saucier's (1994) "mini-markers". His measure is based on that constructed by Goldberg (1992) which consists of 100 personality traits. Out of those, Saucier (1994) selected 8 adjectives per personality trait. Because of reliability issues, some items were removed. In the scale for conscientiousness, 'careless' was removed. In the agreeableness scale 3 items were removed: 'harsh', 'cold', and 'rude'. Finally, in the scale that was used to measure neuroticism, 4 items were removed: 'temperamental', 'touchy', 'relaxed', and 'unenvious'. Originally, in Saucier's (1994) measure, responses were made on a 9-point scale. In this research, a 5-point Likert scale was used ranging from extremely inaccurate (1) to extremely accurate (5). The scale was changed to keep the possible response options in the questionnaire similar (always a 5-point Likert scale). The Cronbach's alpha for extraversion, conscientiousness, agreeableness, open to experience, and neuroticism were respectively ,766; ,806; ,687; ,715; and ,647.

Individual factors were also assessed using measures of career orientation. Baruch (2006) argued that it could be interesting to examine how many people wish to have a boundaryless career and to what extent. Therefore, Briscoe and Hall (2005) developed the boundaryless and protean career attitudes scales. Items in the boundaryless career attitudes scale measured the "boundaryless mindset" of an individual and preferences for organizational mobility (Briscoe et al., 2006). For example, "I enjoy working with people outside of my organization" is one item measuring boundaryless mindset. An example of a reversed item measuring preferences for organizational mobility is "In my ideal career I would work for only one organization". This item, as was the case for other items in the measure, was adjusted for the research group. For example, the previous item was changed to: "Preferably, I would spend the rest of my working life working for this organization". Cronbach's alpha for the boundaryless career attitude scale was ,861. Items in the protean career attitudes scale measured the extent to which individuals were self-directive and value-driven (Briscoe et al., 2006). An example of an item measuring self-directed career attitudes is "I am in charge of my own career". An example of an item measuring value-driven career attitudes is "What I think about what is right in my career is more important to me than what my company thinks". Cronbach's alpha for the protean career attitude scale was ,844. Answers could, again, be given on a 5-point Likert scale ranging from strongly disagree to strongly agree.

Person-environment factors

Person-environment factors were assessed using measures of identification, influence of family, and sense of calling. For identification, the six-item scale developed by Mael and Ashforth (1992) was used. Just like Johnson et al. (2006) did in their research, words were replaced to match the research group. "The Fire Brigade sector" was inserted in the 6 items. For example, one item would be "I'm very interested in what others think about the Fire Brigade sector." Respondents were asked to indicate the extent of their agreement with the statements on a 5-point Likert scale ranging from strongly disagree to strongly agree. The Cronbach's alpha for the scale was ,759. Influence of family was measured with two items that were developed for this study. First, participants were asked whether there are family members that are working for or have worked in the Dutch Fire Brigade sector. If this was the case, participants were asked to indicate (1 being "not at all" to 5 being "very") whether this was a reason for them joining a fire brigade. Sense of calling was measured with one item, using the mission statement from the Fire Brigade: "Saving people and animals is most important in my career", ranging from strongly disagree to strongly agree.

Organizational factors

Organizational factors were assessed using measures of career sponsorship and human resource arrangements. Career sponsorship was assessed using the measure developed by Dreher and Ash (1990). In all the items the word "mentor" was removed and replaced with either "the organization" or "supervisor". This was done for the same reason mentioned before. In the Fire Brigade sector, mentors are not really common. So, it was expected that replacing the word "mentor" would make the items more understandable. An example of an item used in the measure is "The organization offers me challenging assignments that present opportunities to learn new skills". Participation could indicate the extent of their agreement with the statements with response options ranging from strongly disagree to strongly agree. The Cronbach's alpha for this scale was ,939.

Organizational factors were also assessed using measures of human resource arrangements. HR arrangements were assessed using a measure based on that developed by Kooij (not published yet). She listed several human resource arrangements, tools, and possibilities that could be part of the human resource arrangements of an organization. First, it was asked participants to state whether the arrangement, tool, or possibility was present in their organization. Second, it was asked whether they were using the arrangement, tool, or possibility and to what extent participants wanted to. This was also the intentions with the measure that was used in this research. In the current measure, some items from Kooij (not published yet) were maintained, others were adjusted, and some items were added. For example, "making promotion" was maintained; "career development" was

adjusted to “talking with a colleague and/or coach about career development”; and “being in a database with internal and/or external vacancies” was added. Participants were asked to indicate for each item whether the human resource arrangement, tool, or possibility was present in their organization. Response options were either: “yes”, “no”, or “I don’t know”. Cronbach’s alpha for presence of HR-arrangements was ,835. Furthermore, they were asked to indicate whether they were using it and if they wanted to use it. Here, response options were “yes”, “no”, or “don’t want to”. Cronbach’s alpha for usage of HR-arrangements was ,869. In the analysis, the items to measure HR-arrangements were adjusted. For presence of HR-arrangements, the answer-options were changed to either 1 (yes) or 2 (no/I don’t know). For usage of HR-arrangements, answer options were also 1 or 2, respectively ‘yes’ or ‘no, but would want to’ and ‘no, also don’t want to’. This was done because it was expected that the more Fire Brigade officers would know about the HR-arrangements in the organization and the more they would use it, the more career mobility intentions they would have.

Intelligent career investments

Intelligent career investments, the three ways of knowing, were assessed using the measure developed by Khapova (2006). In the knowing why scale 1 item was removed to improve reliability, namely “I think my employer should support my career”. In the items used for knowing whom, the statement that included words like mentor or protégé were removed. One item was added: “I regularly visit fairs and/or conferences with the (sub)goal to meet new people”. It was expected that the new and adjusted statements would be better understood as those with words like mentor and protégé. Participants were asked to indicate the extent of their agreement with the statements on a 5-point Likert scale ranging from strongly disagree to strongly agree. The Cronbach’s alpha for the scales were ,717 (knowing why); ,772 (knowing how); and ,802 (knowing whom).

3.3 Analyses

To test the hypotheses, all items that measured a particular concept were added and divided to create one total score for the concept. With these totals, the relationships between the antecedents and career mobility intentions were assessed using linear regression analysis. The dependent variable was career mobility intentions, the independent variables were all the concepts where every concept was tested separately. Also, two control variables were examined: age and education. Furthermore, the mediating role of the intelligent career investments on the relationships between the antecedents and career mobility intentions was examined using linear regression. For mediation, three conditions have to be met (e.g. Holmbeck, 1997; Masterson, Lewis, Goldman, and Taylor,

2000). First, there has to be a significant relationship between the independent variables and the mediator. Second, the independent variables must have a significant effect on the dependent variable. Third, the mediator must have a significant effect on the dependent variable. Results were significant at $p < .05$ * or $P < .01$ **. When a relationship was significant, we examined the coefficient of determination and beta weights.

4. Results

Generally, the average score on career mobility intentions was 2.05 with a standard deviation of .59. Career mobility intentions were measured using a combination of job turnover intentions and job search behavior. The average scores on those were 2.40 (SD= .70) for job turnover intentions and 1.67 (SD= .66) for job search behavior. Furthermore, the willingness of participants to apply for another job was measured using combinations of inside/outside the Fire Brigade sector and inside/outside the current working region. The average scores and standard deviations are depicted in table 2. Table 3 provides the means, standard deviations, and the levels of significance of the relationships between the variables in the study. With this table the hypotheses will be analyzed. When a significant relationship is established, coefficients of determination and beta coefficients are given.

Hypothesis 1 predicted that the relationship between the Big Five variables and career mobility intentions would be significant in such a way that extraversion (H1a), openness to experience (H1b), and conscientiousness (H1c) would be positively related to career mobility intentions, whereas neuroticism (H1d) and agreeableness (H1e) would be negatively related to career mobility intentions. Hypotheses 1a, 1c, and 1e failed to reach statistical significance. Openness to experience ($r^2 = .042$; $\beta = .214$) and neuroticism ($r^2 = .019$; $\beta = .139$) were significantly related to career mobility intentions. However, neuroticism was not related to career mobility in the predicted direction. Hypothesis 1d predicted that the relationship would be negative, where results indicate that the relationship is positive. So, hypotheses 1a, 1c, and 1e were not supported; hypothesis 1b was supported; and hypothesis 1d was partially supported.

Hypothesis 2 predicted that the relationship between career orientation and career mobility intentions would be significant in such a way that boundaryless career attitude (H2a) and protean career attitude (H2b) were positively related to career mobility intentions. The results show that the relationship between career mobility and boundaryless career attitude is statistically significant ($r^2 = .158$) and positive ($\beta = .398$). This is also the case for the relationship between career mobility intentions and protean career attitude ($r^2 = .018$; $\beta = .136$). So, hypotheses 2a and 2b were supported.

Hypothesis 3 predicted that the relationship between identification and career mobility intentions would be significant in such a way that identification with the Fire Brigade sector (H3a), influence of family (H3b), and a sense of calling (H3c) were negatively related to career mobility intentions. As can

be seen in table 3, the relationship between identification with the Fire Brigade sector and career mobility intentions failed to reach statistical significance. This was also the case for the relationship between influence of family and career mobility intentions. There were very few Fire Brigade officers that have or had family members that also work(ed) in the Fire Brigade sector (35.6%). And for these Fire Brigade officers, this was barely a reason to also join the Brigade (Mean= 1.74; SD= 1.244). So, hypotheses 3a and 3b were not supported. However, hypothesis 3c was supported ($r^2 = .020$; $\beta = -.143$). So, when an individual has a high sense of calling, he or she will score low on career mobility intentions.

Hypothesis 4 predicted that the relationship between career sponsorship and career mobility intentions would be significant in such a way that it would be negatively related to career mobility intentions. As the results indicate, this hypothesis is fully supported ($r^2 = .053$; $\beta = -.230$). So individuals that scored high on career sponsorship, scored low on career mobility intentions and the other way around.

Hypothesis 5 predicted that the relationship between human resource arrangements and career mobility intentions would be significant in such a way that the presence of HR-arrangements (H5a) and the usage of HR-arrangements (H5b) were positively related to career mobility intentions. As can be seen in table 3, the relationship between the presence of HR-arrangements and career mobility intentions is not significant. However, the relationship between the usage of HR-arrangements and career mobility intentions is significant ($r^2 = .022$; $\beta = .147$). So, knowing which HR-arrangements are present in an organization doesn't have an effect on career mobility intentions; using those activities does (positively). Thus, hypothesis 5a wasn't supported; hypothesis 5b was supported.

Finally, hypothesis 6 predicted that the intelligent career investments 'knowing why' (H6a), 'knowing how' (H6b), and 'knowing whom' (H6c) would mediate the relationship between the three sets of antecedents and career mobility intentions. As was discussed in the method chapter, three conditions have to be met for mediation (e.g. Holmbeck, 1997; Masterson et al., 2000). First, there had to be a significant relationship between the antecedents and the intelligent career investments. As can be seen in table 3, this condition was met in several cases. Of the individual factors, extraversion; conscientiousness; openness to experience; protean career attitude; and boundaryless career attitude had a significant relationship with all the intelligent career competencies. Furthermore, agreeableness was significant related to the 'knowing how' competency. Of the person-environment factors that were examined, identification with the Fire Brigade sector was significantly related to the 'knowing why' and the 'knowing how' competencies. Also, a significant

relationship was found between influence of family and the ‘knowing whom’ competency. Of the organizational factors that were examined, career support had a significant relationship with the ‘knowing why’ and ‘knowing whom’ competencies. Coefficients of determinations and beta coefficients of the significant relationships are depicted in table 4. Second, the antecedents had to have a significant effect on career mobility intentions. As was explained in the results of the former hypotheses, significant relationships were found between openness to experience; neuroticism; boundaryless career attitude; protean career attitude; sense of calling; career support; the usage of HR-arrangements; and career mobility intentions. Third, the intelligent career investments had to have a significant effect on career mobility intentions. The results indicate that this condition is not met. Therefore, the 3 ways of knowing do not significantly mediate the relationship between individual factors, person-environment factors, organizational factors and career mobility intentions. So, hypotheses 6a, 6b, and 6c weren’t supported. However, given the significant results in the measurements of the first two conditions, intelligent career investments are influenced by some of the antecedents and may have a different link with career mobility intentions. This will return in the chapter where the limitations and recommendations are discussed.

Furthermore, the two control variables that were examined (age and education) were significantly related to career mobility intentions. For age, the relationship was negative ($r^2 = .056$; $b = -.018$). For education, the relationship was positive ($r^2 = .056$; $b = .168$). Another significant relationship was found for age and knowing whom ($r^2 = .018$ / $b = .009$).

Table 2: Average scores and standard deviations on several types of career mobility

Statistics

I would be willing to apply for a job if...	Find a better job outside the region and within the Fire Brigade sector	Find a better job outside the region and outside the Fire Brigade sector	Am asked for a better job within the current region and within the Fire Brigade sector	Am asked for a better job within the region and outside the Fire Brigade sector	Am asked for a better job outside the region and within the Fire Brigade sector	Am asked for a better job outside the region and outside the Fire Brigade sector
Mean	2,55	2,19	3,60	2,46	2,80	2,10
Std. Deviation	1,192	1,178	1,255	1,255	1,191	1,148

Table 3: Means, Standard Deviations (SD), and the level of significance

Variable	Mean	SD	Career mobility intentions	Knowing why	Knowing how	Knowing whom
Career mobility intentions	2.05	.59				
Age	43.43	8.06	.000**	.151	.509	.032*
Education	3.85	.82	.000**	.838	.094	.476
Extraversion	3.71	.56	.190	.000**	.000**	.000**
Conscientiousness	3.97	.57	.538	.000**	.000**	.004**
Agreeableness	4.08	.43	.999	.066	.000**	.113
Openness to experience	3.43	.51	.001**	.000**	.000**	.000**
Neuroticism	1.70	.56	.031*	.378	.091	.177
Boundaryless career attitude	3.81	.55	.000**	.000**	.000**	.047*
Protean career attitude	3.76	.47	.040*	.000**	.000**	.000**
Identification	3.47	.63	.741	.000**	.000**	.105
Sense of calling	3.32	1.03	.029*	.548	.539	.142
Family	1.74	1.24	.767	.074	.923	.017*

Career sponsorship	3.33	.74	.001**	.041*	.124	.000**
Presence of HR- arrangements	.51	.27	.149	.738	.490	.318
Usage of HR-arrangements	.39	.27	.030*	.697	.536	.129
Knowing why	3.58	.46	.951			
Knowing how	3.93	.41	.092			
Knowing whom	3.53	.53	.137			
3 ways of knowing	3.59	.35	.240			

*statistically significant lower than .05

** statistically significant lower than .01

Table 4: Coefficients of determination and beta coefficients

Variable	Knowing why	Knowing how	Knowing whom
Extraversion	$r^2 = .089$ $b = .298$	$r^2 = .110$ $b = .331$	$r^2 = .073$ $b = .270$
Conscientiousness	$r^2 = .053$ $b = .229$	$r^2 = .069$ $b = .263$	$r^2 = .033$ $b = .181$
Agreeableness	n.s.	$r^2 = .100$ $b = .317$	n.s.
Openness to experience	$r^2 = .064$ $b = .253$	$r^2 = .113$ $b = .336$	$r^2 = .076$ $b = .276$
Neuroticism	n.s.	n.s.	n.s.
Boundaryless career attitude	$r^2 = .029$ $b = .172$	$r^2 = .091$ $b = .302$	$r^2 = .017$ $b = .131$
Protean career attitude	$r^2 = .074$ $b = .272$	$r^2 = .115$ $b = .340$	$r^2 = .074$ $b = .271$
Identification	$r^2 = .056$ $b = .236$	$r^2 = .073$ $b = .270$	n.s.
Sense of calling	n.s.	n.s.	n.s.
Family	n.s.	n.s.	$r^2 = .034$ $b = .185$
Career sponsorship	$r^2 = .019$ $b = .137$	n.s.	$r^2 = .065$ $b = .254$
Presence of HR-arrangements	n.s.	n.s.	n.s.
Usage of HR-arrangements	n.s.	n.s.	n.s.

n.s.= not significant

5. Discussion

Using the data of 276 Dutch Fire Brigade officers, it was found that there are several factors that predict their career mobility intentions. In this chapter, the results that were given in the previous chapter will be explained in scientific and practical terms.

Of the individual factors that were examined, two of the Big Five variables (openness to experience and neuroticism) and career orientation (protean and boundaryless career attitude) were factors that predicted career mobility intentions of Fire Brigade officers. In all these case, the relationship was positive. For openness to experience this means that when individuals see themselves as creative, imaginative, deep, and intellectual they have more intentions to be mobile. This finding is consistent with previous research on the relationship between openness to experience and career mobility (e.g. Larson, Rottinghaus, and Borgen, 2002; Ng et al., 2007). The positive relationship between neuroticism and career mobility intentions appears to be strange at first sight, since neuroticism included characteristics like enviousness, jealousy, and moodiness. However, Ng et al. (2007) offered an explanation for this. They made a distinction between four types of mobility and connected neuroticism positively to one of them, external-lateral mobility. This type of mobility refers to a job switch at the same hierarchical level but with a different employer. Their explanation was that individuals that score high on neuroticism have low self-esteem (Judge and Bono, 2001) and are therefore constantly searching for positive confirmation. This could explain frequent switches in employer. Since the current research hasn't made a distinction between these different types of mobility, this should be examined in future research: to be discussed more elaborately in the limitations and recommendations chapter.

Boundaryless and protean career attitudes also predicted career mobility intentions. Especially the variance that was explained by boundaryless career attitude was high (15.8%). These results indicate that when Fire Brigade officers believe that their careers are driven by their own values instead of those of the organization and that they are responsible for and in charge of their careers (Briscoe and Hall, 2002), they show more career mobility intentions. The positive relationship that was found between boundaryless and protean career attitudes and career mobility intentions is consistent with previous research on this topic. For example, Briscoe et al. (2006) found that a protean career involves greater mobility. Sullivan and Arthur (2006) found the same for the relationship between boundaryless career attitude and career mobility.

The usage of human resource arrangements, one of the organizational factors, also had a significant relationship with career mobility intentions. As Nauta et al. (2005) noted: good career policies can create a favourable attitude towards mobility and can increase regular career steps. For Fire Brigade officers this means that their mobility intentions increases when they engage in activities like career accompaniment, taking courses for personal development or other kinds of schooling once a year, making promotion, being registered in a database with internal and/or external vacancies, but also experiencing support from executives for their career, and being able to influence the way in which their work is executed.

Sense of calling and career sponsorship were negatively related to career mobility intentions. These results indicate that Fire Brigade officers who find saving people and animals most important in their career, have less career mobility intentions than Fire Brigade officers that don't see this as most important. This is consistent with the research of Wrzesniewski, McCauley, Rozin, and Schwartz (1997) who argued that individuals with a sense of calling are mainly looking for satisfaction in their career and not for career advancement. The negative relationship between career sponsorship and career mobility intentions is an important finding. Career sponsorship is offered by the organization by giving employees challenging assignments that develop skills, meet new colleagues, and enlarge contact with the top of an organization. Several studies support the finding that challenging assignments decreases job turnover intentions (e.g. Peske, Liu, Johnson, Kauffman, and Kardos, 2002; Rodriguez, Green, and Ree, 2003; Mayer, 2006). Career sponsorship is offered by a supervisor in the form of sharing career experiences, keeping an employee informed of what is going on in higher levels of the organization, stimulating new forms of working behavior, and having the same values as the employee. These findings indicate that when Fire Brigade officers experience support for their careers from the organization and supervisors, they have relatively low intentions to leave their current job. This is supported by findings that supervisor support plays a critical role in the working life of an individual (Liden, Sparrowe, and Wayne, 1997); that individuals see the behavior of supervisors as representative of the organization (Stinglhamber and Vandenberghe, 2003); and that supervisor support is strongly related to the work attitude of employees, much more important than co-worker support (Ng and Sorensen, 2008). Interesting is that family doesn't influence the career mobility intentions of Fire Brigade officers. Very few Fire Brigade officers have family members that work of have worked for the Fire Brigade sector. This means that being in the Fire Brigade sector is no longer passed on from generation to generation. And when this is the case in a certain family, it isn't of any influence on career mobility intentions. In other studies it was found that family is a large factor in the career decisions of an individual (e.g. Valcour and Tolbert, 2003; Dette and Dalbert, 2005; Feldman and Ng, 2007). The findings in this research thus suggest otherwise.

The relationships that were established combined with the relatively high scores on the nominative characteristics of Dutch Fire Brigade officers should result in career mobility intentions. However, average scores on career mobility intentions are very low. Mobility intentions were measured with job turnover intentions and job search behavior. The low scores on both variables indicate that there are very few Fire Brigade officers that are thinking about making a step in their career or performing activities (talking to family or former employers, searching on the internet, or actually going to a job interview) to actually do so. As was stated in career literature, stronger career mobility intentions make it more likely that actual mobility behavior will occur (e.g., Ajzen, 1991; Sousa-Poza and Henneberger, 2005; Crossley, Bennet, Jex, and Burnfield, 2007). Given the low scores on mobility intentions, it is unlikely that Fire Brigade officers will make a step in their career. The research conducted by Lubberman and Bouwmeester (2000) makes this clear, since they argued that career mobility within the Fire Brigade sector is low. Furthermore, the average amount of years (9.2) that Fire Brigade officers are working for their current employer also support this conclusions, since this is fairly long (Khapova, 2006). Moreover, in this study a negative relationship was found between age and career mobility intentions. The average age of Dutch Fire Brigade officers that was found in this study, was 43.4 years. In several studies on careers, a difference is made between over-forties and 'younger' employees (e.g. Finkelstein and Farrell, 2007; Van der Heijden, De Lange, Demerouti, and Van der Heijde, 2009). Thus, we can say that we can categorize Dutch Fire Brigade officers in the 'older' age group, which results in less mobility intentions. The research conducted by Feldman and Ng (2007) supports this finding. They argue that decisions about career mobility depend heavily on career and life stage. Furthermore, Mount et al. (2005) stated that what individuals seek in a job will become stable over time and with age. For Fire Brigade officers, this means that their career mobility intentions will decrease even more in the future.

Fire Brigade officers do claim to have the nominative characteristics and attitudes towards their career and career mobility. Take, for example, the average scores on boundaryless and protean career attitudes. Those scores indicate that Dutch Fire Brigade officers want to develop themselves in their career, want to learn, cooperate with other people, and get energy from new experiences. Also, Fire Brigade officers claim to be open to experience, conscious and extravert. However, the low average score on mobility intentions show that officers are not searching any new (learning) experiences. The average scores on the 3 ways of knowing indicate that Fire Brigade officers seem to know what they want in their career, what skills and expertise they need in order to obtain what they want, and know whom to turn to for this. The scores on the 3 ways of knowing seem to be positive, however Fire Brigade officers don't exhibit the intentions to take the career mobility opportunities

that intelligent career investments offer (Eby, Buts, and Lockwood, 2003; Sullivan and Arthur, 2006). Furthermore, the average score on identification with the Fire Brigade sector indicates that Fire Brigade officers identify themselves with the Fire Brigade sector. So, they take it personal when the Fire Brigade is criticised, and they perceive the success of the Fire Brigade as their own. In previous studies, the (negative) relationship between organizational identification and career mobility has been established (e.g. Abrams, Ando, and Hinkle, 1998; Kondratuk, Hausdorf, Korabik, and Rosin, 2004; George and Chattopadhyay, 2005; Riketta, 2005). King, Burke, and Pemberton (2005) argued that careers are still 'bounded' by career history, occupational identity and by institutional constraints to job opportunities. Although the relationship between identification with the Fire Brigade sector and career mobility intentions isn't established in this research, the scores indicate that the careers of Fire Brigade officers are 'bounded' to the Fire Brigade sector. This makes it less likely that officers will leave the Fire Brigade sector. This is also apparent in the scores on the several types of career mobility that were examined (see table 2). The highest average score was reported on the item: "I'm willing to apply for a better job if it's within the current region and within the Fire Brigade sector". The average scores of the other types of mobility are lower. These results indicate that, in general, Fire Brigade officers are not willing to leave the Fire Brigade sector or the current region in which they work. Furthermore, Fire Brigade officers only seem to be willing to apply for another job when they are asked for it. This finding indicates that Fire Brigade officers are not proactive when it comes to making a step in their career.

Given the findings, we can argue that the characteristics Fire Brigade officers claim to have are not reflected in their career mobility intentions. A possible cause of this could be the self-assessment character of the measures. We will return to this in the chapter that discussed the limitations. However, it is also possible that Dutch Fire Brigade officers don't feel they need to learn because they feel they have enough skills and expertise and that their career offers them enough challenges and learning experiences. As a result, the Fire Brigade sector is seen as a nice, comfortable, and nurturing organization to work for. That the Fire Brigade is seen as a good employer is, of course, positive news for the organization. However, this satisfaction with the current situation and no longing for movement and change raises questions about learning in the Dutch Fire Brigade sector. A learning organization is able to learn by creating and transferring knowledge, therefore being innovative to meet customers' needs and strategic goals (Yang, Watkins, and Marsick, 2004). Because of the lack of career mobility, the Fire Brigade sector may not to have these characteristics and, therefore, may not be a learning organization (Lam and Lundvall, 2004).

A lack of learning is not just dangerous for organizations; it is also dangerous for individuals. Learning experiences are necessary to develop transferable skills (Arthur and DeFillippi, 1994; Bird, 1994). Transferable skills are skills that are applicable across different (job) contexts (Bridges, 1993) Job and project mobility increase the range of transferable skills and knowledge of an individual (Pil and Leana, 2000), therefore creating career capital (Arthur, DeFillippi, and Jones, 2002). Career capital will enhance the employability of individuals. Van der Heijde and Van der Heijden (2006) define employability as 'the continuous fulfilling, acquiring, or creating of work through the optimal use of one's competences' (p. 453). Other definitions of employability emphasize career concepts like: personal development and lifelong learning (Bezuijzen, 2005; Rothwell and Arnold, 2007); career development (Sterns and Dorsett, 1994); adaptability (Fugate et al., 2004); and mobility (Van Dam, 2005). Organizations can also benefit from employability, since it will optimize the deployment of staff (Nauta, Van Vianen, Van der Heijden, Van Dam, and Willemsen, 2009). Moreover, employees will react more positively to organizational and job changes when the organizational culture is perceived as oriented towards development (Van Dam, Oreg, and Schyns, 2008; Nauta et al., 2009).

6. Scientific limitations and recommendations

There are some limitations that can be identified in the current research. First, it was hard to reach the individuals in the research group. In the 'sample and procedure' section it was explained that, to ensure privacy, the safety-regions operated as middleman between the researcher and the research group. It was tried to make it as clear as possible to define the research group for the contact persons. However, it's possible that not every Fire Brigade officer of the regions that participate received the questionnaire. Second, the survey consisted of self-assessment items. Employees think 'better' of themselves than outsiders do (Van der Heijden, 2000) and there is always a chance that social desirable answers were given. Therefore, self-assessment surveys have a greater chance of response bias and measurement error (Green, 2004). Third, the scales to measure a sense of calling and the influence of family consisted of respectively one and two item (s). Statically, a valid measurement scale should consist of at least 3 items (e.g. Clark and Watson, 1995; O'Rourke, Hatcher, and Stepanski, 2005). 'Saving people and animals' is stated in the mission statement of the Fire Brigade. So, it was considered to be an appropriate measure for this research. However, results could be different when this concept is measured with more than one item. Fourth, the responses per region were too small to conduct a multi-level analysis. However, by performing a single-level analysis any cultural or other differences that could exist are eliminated. Fifth, a positive relationship was found between the Big Five personality trait 'neuroticism' and career mobility intentions. At first sight, this appears to be a strange result. In the discussion, a possible explanation was given. However, participants did indicate that these questions were "too heavily asked", "hard", and "too black and white". So, it is very well possible that the questions concerning neuroticism weren't clear and outcomes would be different when items would be adjusted.

This research gives rise to other things that could or have to be examined in future research. First, it was indicated that Fire Brigade officers are most interested in another job when it is within the Fire Brigade sector and within their current region. This could indicate that they are not willing to move. The financial crisis that we are in today could be a cause of this. Therefore, these questions should be asked again when the crisis is over to see whether Fire Brigade officers are still not willing to leave the current region in which they work. Second, research should be conducted among Fire Brigade officers on their attitude towards different kinds of mobility. In this research, a distinction has been made between mobility within and outside the Fire Brigade sector and mobility within and outside the region. However, there are more types of mobility. For example, Ng et al. (2007) made a distinction between internal-upward, external-upward, internal-lateral, and external-lateral mobility. Making such a distinction, testing if there are differences between Fire Brigade officers, and what

antecedents there are for this, could give a more complete view on career mobility motives and antecedents of mobility. Third, in the results of the tests of the mediating role of the three ways of knowing, some significant relationships were found. However, the hypothesized mediating role was not supported in the results. Future research should examine the role that the three ways of knowing have with regard to career mobility intentions. Fourth, in this research three antecedents of mobility intentions were chosen. However, it is obvious that there are other predictors of career mobility intentions. For example, Brown, Hesketh, and Williams (2003) argue that mobility intentions will also depend on the state of the external labour market. In future research, other factors that influence career mobility intentions need to be examined. Fifth, actual mobility should be measured. Several scholars argue that intentions are an antecedent of actual behavior (e.g. Ajzen, 1991; Sousa-Poza and Henneberger, 2005; Crossley, Bennet, Jex, and Burnfield, 2007). So, career mobility intentions could be an antecedent of actual career mobility. Finally, this research made a start to examine career mobility in the Fire Brigade sector by focusing on Fire Brigade officers. To get a more complete view on career mobility in the sector, research has to be conducted among other groups within the Brigade. Furthermore, a comparison study could be done among comparable groups and levels, for example among police-officers and medical aid personnel. Managers in various sectors could also be a research group, since Fire Brigade officers are, most of the time, managing.

7. Practical recommendations

In the introduction, several reasons of why mobility is needed in the Fire Brigade sector were given. First, because of regionalisation, the demand for professional Fire Brigade officers will increase. Second, there is limited run through at the top of the Fire Brigade and mutual competition between fire brigades in the Netherlands. Third, it is extremely difficult to fill-in vacancies because of a lack of qualified personnel and too few reactions (Lubberman and Bouwmeester, 2000). In the discussion, it was argued that the Fire Brigade sector is viewed by its officers as a nice, comfortable, and nurturing organization to work for. Consequently, there are few career mobility intentions and, thus, no movement. This raises the question whether the Dutch Fire Brigade is a learning organization. If it isn't, it's not just negative for the organization but also for the individual Fire Brigade officers. To create a learning organization and to make Fire Brigade officers employable, officers need to develop transferable skills and career mobility needs to increase. Given the findings that Fire Brigade officers have no intention to be mobile and that they are not proactive in seeking opportunities to develop transferable skills and become more employable, several measures could be taken.

First, creating awareness and a culture of development. The Dutch Fire Brigade sector needs to realize that they contribute to the development of individuals. The sector can stimulate employees' employability by creating a culture of support for individual development (Schneider, Brief, and Guzzo, 1996). When employability is part of the organizational culture, employees will feel stimulated to orient themselves on their employability (Nauta et al., 2009). Such a culture can be reached by an open mentality toward new idea and a great deal of experimentation (Leonard-Baron, 1992). Management should spearhead the process making clear its support and involving all personnel (Williams 2001). This will not be a natural process, so management needs to be trained in developing the supportive skills they need to increase career mobility.

Second, since Dutch Fire Brigade officers are not proactive and usage of HR-arrangements is low, mobility needs to be 'forced'. Several HR-arrangements could be put in place to increase learning in the Dutch Fire Brigade sector. These measures have a positive impact on several performance variables: higher productivity; higher rates of growth; and more innovative. (Lam and Lundvall, 2004)

- Organizing work into cross-functional team projects. Organizing work in project teams will allow individuals to develop and deploy transferable skills (Arthur et al., 2002). This will make individuals more employable.
- Circulating employees between project teams, departments, and other areas in the organization.

- Investing in internal training and learning. For example, the Dutch Fire Brigade sector could implement an employability website where employees need to spend a special budget on training and education, career guidance, and mobility workshops (Nauta, 2007; Sjollema, 2007).
- Establishing a career centre for supporting employees when they (have to) change jobs (Heemskerk, Van der Wolk, and Nauta, 2007).

Finally, learning has to be included in the assessment of individuals and the organization. Otherwise, there is no incentive to learn. Several studies have focused on the assessment of learning. For example, Jerez-Gómez, Céspedes-Lorente, and Valle-Cabrera (2005) developed four dimensions on which learning could be assessed: managerial commitment, systems perspective, openness and experimentation, and knowledge transfer and integration. However, the assessment instrument will have to be adjusted to the Dutch Fire Brigade sector and the HR-arrangements it puts into place to increase career mobility.

8. Conclusion

The current study focused on career mobility intentions. The Dutch Fire Brigade sector wants to increase mobility for three reasons. First, there is a lack of qualified personnel. Second, there is limited run through at the top of the Fire Brigade and mutual competition between fire brigades in the Netherlands. Third, the Fire Brigade sector finds it extremely difficult to fill-in vacancies. To make a start to find possible causes for this, the career mobility intentions of Fire Brigade officers in the Dutch Fire Brigade sector was examined. The general research question was: *Which factors predict Fire Brigade officers' intentions for career mobility?* These factors were examined on three levels: the individual level; the person-environment level; and the organizational level. It was discussed how and under which conditions these three levels of factors predicted career mobility intentions. Furthermore, the mediating role of intelligent career investments was examined.

To answer the research question: openness to experience; neuroticism; boundaryless career attitude; protean career attitude; sense of calling; career sponsorship; and the usage of HR-arrangements predicted Dutch Fire Brigade officers' career mobility intentions. Sense of calling and career sponsorship decreased career mobility intentions, where the other factors increase mobility intentions. Moreover, results indicated that career mobility intentions among Dutch Fire Brigade officers are very low. In the discussion, it was argued that career mobility creates a learning organization. Since there is not much mobility within the Fire Brigade sector, it could be that the Dutch Fire Brigade isn't a learning organization. A lack of learning is not just dangerous for the organization, it's also dangerous for individuals since they won't develop transferable skills.

To get back to the motives for this study, the Fire Brigade sector could do several things to increase career mobility among Fire Brigade officers. First, creating awareness and a culture of development. Second, mobility needs to be 'forced' with the use of several HR-arrangements. Finally, learning has to be included in the assessment of individuals and the organization.

By focusing on career mobility intentions, this study contributed to science and practice in several ways. First, this study extends the existing literature on career mobility and career mobility intentions. Second, the study contributes to the discussion on how career mobility can benefit organizations as well as individual employees. Moreover, the study pioneers examination of careers in such a unique sample as the Dutch Fire Brigade sector.

References

- Abrams, D, Ando, K., and Hinkle, S. (1998), Psychological attachment to the group: Cross-cultural differences in organizational identification and subjective norms as predictors of workers' turnover intentions, *Personality and Social Psychology Bulletin*, Vol. 24, No. 10, pp. 1027-1039.
- Ajzen, I. (1991), The theory of planned behavior, *Organizational behavior and human decision processes*, Vol. 50, No. 2, pp. 179-211.
- Arthur, M.B., Claman, P.H. and DeFillippi, R.J. (1995), Intelligent enterprise, intelligent careers, *Academy of Management Executive*, Vol. 9, No. 4, pp. 7-22.
- Arthur, M.B., DeFillippi, R.J. and Jones, C. (2002), Project-based learning as the interplay of career and company non-financial capital, *Management Learning*, Vol. 32, pp. 99-117.
- Arthur, M.B., Inkson, K., and Pringle, J.K. (1999), *The new careers: Individual action and economic change*, Sage Publications, Thousand Oaks, CA.
- Arthur, M. B. and Rousseau, D. M. (Eds) (1996), *The boundaryless career: A new employment principle for a new organizational era*, Oxford University Press, Oxford.
- Ashforth, B.E. and Johnson, S.A. (2001), Which hat to wear? The relative salience of multiple identities in organizational contexts. In Hogg, M.A. and Terry, D.J. (Eds), *Social identity processes in organizational contexts*, Psychology Press, Philadelphia, pp. 1-12.
- Ashkenas, R., Ulrich, D., Jick, T. and Kerr, S. (1995), *The Boundaryless Organization*, Jossey-Bass, San Francisco, CA.
- Barrick, M. R., Mount, M. K., and Gupta, R. (2003), Meta-analysis of the relationship between the fivefactor model of personality and Holland's occupational types, *Personnel Psychology*, Vol. 56, No. 1, pp. 45-74.
- Baruch, Y. (1998), "The rise and fall of organizational commitment", *Human System Management*, Vol. 17 No. 2, pp. 135-43.
- Baruch, Y. (2004), Transforming careers: from linear to multidirectional career paths: Organizational and individual perspectives, *Career Development International*, Vol. 9, No. 1, pp. 58-73.
- Baruch, Y. (2006), Career development in organizations and beyond: Balancing traditional and contemporary viewpoints, *Human Resource Management Review*, Vol. 16, No. 2, pp. 125-138.
- Becker, M. C. (2004), Organizational routines: a review of the literature, *Ind. Corp Change*, Vol. 13, No. 4, pp. 643-678.
- Belzil, C. (1996), Relative efficiencies and comparative advantages in job search, *Journal of Labor Economics*, Vol. 14, No. 1, pp. 154-173.

- Bergami, M. and Bagozzi, R.P. (2000), Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization, *British Journal of Social Psychology*, Vol. 39, No. 4, pp. 555-577.
- Bezuijen, X. M. (2005), Leadership and employee development. Unpublished doctoral dissertation, Tilburg University Press, Tilburg, The Netherlands.
- Bird, A. (1994), Careers as repositories of knowledge: A new perspective on boundaryless careers. *Journal of Organizational Behavior*, Vol. 15, pp. 325-344.
- Bridges, D. (1993), Transferable skills: A philosophical perspective, *Studies in Higher Education*, Vol. 18, No. 1, pp. 43-51
- Briscoe, J. P. and Hall, D. T. (2002), *The protean orientation: Creating the adaptable workforce necessary for flexibility and speed*, Paper given at the Academy of Management, Denver.
- Briscoe, J.P. and Hall, D.T. (2005), *Protean and boundaryless career assessment collection*, copyrighted scale collection, unpublished, Boston, MA.
- Briscoe, J.P. and Hall, D.T. (2006), The interplay of boundaryless and protean careers: Combinations and implications, *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 4-18.
- Briscoe, J.P., Hall, D.T., and Frautschy DeMuth, R.L. (2006), Protean and boundaryless careers: An empirical exploration, *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 30-47.
- Brown, J. S., and Duguid, P. (1991), Organizational learning and communities-of-practice: Toward a unified view of working, learning, and innovation, *Organization Science*, Vol. 2, No. 1, pp. 40-57.
- Brown, P., Hesketh, A., and Williams, S. (2003), Employability in a knowledge-driven economy, *Journal of Education and Work*, Vol. 16, pp. 107-126.
- Cappeli, P. (1999), *The new deal at work: Managing the market-driven workforce*, Harvard Business School Press, Boston.
- Centraal Bureau voor de Statistiek (2008), *Brandweerstatistiek 2007*, Den Haag/Heerlen.
- Clark, L. A., and Watson, D. (1995), Constructing validity: Basic issues in scale development, *Psychological Assessment*, Vol. 7, No. 3, 309-319.
- Crossley, C.D., Bennet, R.J., Jex, S.M., and Burnfield, J.L. (2007), Development of a global measure of job embeddedness and integration into a traditional model of voluntary turnover, *Journal of Applied Psychology*, Vol. 92, No. 4, pp. 1031-1042.
- DeFillippi, R.J. and Arthur, M.B. (1994), The boundaryless career: A competency-based perspective, *Journal of Organizational Behavior*, Vol. 15, No. 4, pp. 307-324.
- DeFillippi, R.J. and Arthur, M.B. (1996), Boundaryless contexts and careers: A competency-based perspective. In Arthur, M.B. and Rousseau, D. (Eds), *The boundaryless career*, Oxford University Press, Oxford, UK.

- Den Boer, P. and Hövels, B. (2005), *Loopbaanbaden voor medewerkers in veiligheidsfuncties binnen de collectieve sector*, Kenniscentrum Beroepsonderwijs Arbeidsmarkt, Nijmegen.
- Detle, D. and Dalbert, C. (2005), Moving for their first job or staying put? Predictors of high school students' attitudes toward geographic mobility, *Journal of Applied Psychology*, Vol. 35, No. 8, pp. 1719-1736.
- Dienesch, R.M. and Liden, R.C. (1986), Leader-member exchange model of leadership: A critique and further development, *Academy of Management Review*, Vol. 11, No. 3, pp. 618-634.
- Digman, J.M. (1990), Personality structure: Emergence of the five-factor model, *Annual Review of Psychology*, Vol. 41, No. 1, pp. 417-440.
- Drazin, R., Glynn, M. A., and Kazanjian, R. K. (1999), Multilevel theorizing about creativity in organizations: A sensemaking perspective, *The Academy of Management Review*, Vol. 24, No. 2, pp. 286-307.
- Dreher, G.F. and Ash, R.A. (1990), A comparative study of mentoring among men and women in managerial, professional, and technical positions, *Journal of Applied Psychology*, Vol. 75, No. 5, pp. 539-546.
- Eby, L. T., Butts, M., and Lockwood, A. (2003), Predictors of success in the era of the boundaryless career. *Journal of Organizational Behavior*, Vol. 24, No. 6, pp. 689–708.
- Feldman, D.C. and Ng, T.W.H. (2007), Careers, mobility, embeddedness, and success, *Journal of Management*, Vol. 33, No. 3, pp. 350.
- Finkelstein, L. M., and Farrell, S. K. (2007), An expanded view of age bias in the workplace. In Shultz, K.S. and Adams, G.A. (Eds.), *Aging and work in the 21st century*, Lawrence Erlbaum Associates, London, UK.
- Fugate, M., Kinicki, A. J., and Ashforth, B. E. (2004), Employability: A psycho-social construct, its dimensions, and applications, *Journal of Vocational Behavior*, Vol. 65, No. 1, pp. 14-38.
- Gelissen, J. and De Graaf, P.M. (2006), Personality, social background, and occupational career success, *Social Science Research*, Vol. 35, No. 3, pp. 702-726.
- George, E. and Chattopadhyay, P. (2005), One foot in each camp: The dual identification of contract workers, *Administrative Science Quarterly*, Vol. 50, No. 1, pp. 68-99.
- Gioia, D. A., and Pitre, E. (1990), Multiparadigm perspectives on theory building, *The Academy of Management Review*, Vol. 15, No. 4, pp. 584-602.
- Goffee, R. and Jones, G. (2000), Career, community, and social architecture: an exploration of concepts. In Peiperl, M.A., Arhtur, M.B., Goffee, R., and Morris, T. (Eds), *Career frontiers: New conceptions of working lives*, Oxford University Press, Oxford, pp. 256-272.
- Goldberg, L.R. (1992), The development of markers for the Big-Five factor structure, *Psychological Assessment*, Vol. 4, No. 1, pp. 26-42.

- Gottfredson, G.D. (1977), Career stability and redirection in adulthood, *Journal of Applied Psychology*, Vol. 62, No.4, pp. 436-445.
- Green, F. (2004), *First Thoughts on Methodological Issues in an International Assessment of Adult Skills*, Expert paper prepared for the first PIAAC IEG meeting, Paris, 26-27 April, OECD.
- Guest, D.E. (2004), The psychology of the employment relationship: An analysis based on the psychological contract, *Applied Psychology: An International Review*, Vol. 53, No. 4, pp. 541-555.
- Hall, D. T. (2002), *Careers in and out of organizations*, Sage Publications, Thousand Oaks, CA.
- Hall, D.T. and Chandler, D. (2004), *Psychological success: When the career is a calling*, Technical report, Boston University Executive Development Roundtable.
- Hartog, J., Mekkelholt, E., and Van Ophem, H. (1988), Testing the relevance of job search for job mobility, *Economic Letters*, Vol. 27, No. 3, pp. 299-303.
- Heemskerk, F., Van der Wolk, J., and Nauta, A. (2007), *Hoofdrapport project 'verandering van spijs'*, [Main report on career mobility in the health care and welfare sector], Unpublished research Report, TNO, Hoofddorp, The Netherlands.
- Herriot, P. and Pemberton, C. (1995), *New Deals*, John Wiley, Chichester.
- Hoegl, M., Parboteeah, K. P., and Munson, C. L. (2003), Team-level antecedents of individuals' knowledge networks, *Decision Sciences*, Vol. 34, No. 4, pp. 741-770.
- Hogg, M.A. and Terry, D.J. (2001), Social identity theory and organizational processes. In Hogg, M.A. and Terry, D.J. (Eds), *Social identity processes in organizational contexts*, Psychology Press, Philadelphia, pp. 1-12.
- Holland, J.L. (1996), Exploring careers with a typology: what we have learned and some new directions, *American Psychologist*, Vol. 51, No. 4, pp. 397-406.
- Holland, J. L. (1997), *Making Vocational Choices: A Theory of Vocational Personalities and Work Environments (3rd Ed.)*, Psychological Assessment Resources, Lutz, FL.
- Holland, J.L., Fritzsche, B.A., and Powell, A.B. (1994), *The self-directed search technical manual – 1994 edition*, Psychological Assessment Resources, Odessa, FL.
- Holland, J.L., Sorensen, A.B., Clark, J.P., Nafziger, D.H., and Blum, Z.D. (1973), Applying an occupational classification to a representative sample of work histories, *Journal of Applied Psychology*, Vol. 58, No. 1, pp. 34-41.
- Holmbeck, G.N. (1997), Toward terminological, conceptual, and statistical clarity in the study of mediators and moderators: Examples from the child-clinical and pediatric psychology literatures, *Journal of Consulting and Clinical Psychology*, Vol. 65, No. 4, pp. 599-610.
- Ibarra, H., and Deshpande, P. (2007), Networks and identities: Reciprocal influences on career processes and outcomes, *Handbook of career studies*, Sage, Los Angeles, CA, pp. 268–82.

- Jerez-Gómez, P., Céspedes-Lorente, J., and Valle-Cabrera, R. (2005), Organizational learning capability: A proposal of measurement, *Journal of Business Research*, Vol. 58, pp. 715-725.
- Johnson, M.D., Morgeson, F.P., Ilgen, D.R., Meyer, C.J., and Lloyd, J.W. (2006), Multiple professional identities: Examining differences in identification across work-related targets, *Journal of Applied Psychology*, Vol. 91, No. 2, pp. 498-506.
- Jones, C. and DeFillippi, R.J. (1996), Back to the future in film: combining industry and self-knowledge to meet career challenges of the 21st century, *Academy of Management Executive*, Vol. 10, No. 4, pp. 89-103.
- Judge, T.A. and Bono, J.E. (2001), Relationship of core self-evaluations traits-self-esteem, generalized self-efficacy, locus of control, and emotional stability – with job satisfaction and job performance: A meta-analysis, *Journal of Applied Psychology*, Vol. 86, No. 1, pp. 80-92.
- Judge, T. A., and Ilies, R. (2002), Relationship of personality to performance motivation: A meta-analytic review, *Journal of Applied Psychology*, Vol. 87, No. 4, pp. 797-807.
- Kadushin, C. (2002), The motivational foundation of social networks, *Social Networks*, Vol. 24, No. 1, pp. 77-91.
- Khapova, S. N. (2006), *Careers in the knowledge economy and web-based career support: New challenges and opportunities*, PrintPartners Ipskamp B.V., Enschede.
- King, Z., Burke, S., and Pemberton, J. (2005), The ‘bounded’ career: An empirical study of human capital, career mobility and employment outcomes in a mediated labour market, *Human Relations*, Vol. 58, No. 8, pp. 981-1007.
- Kooij (not published yet)...
- Komarraju, M. and Karau, S.J. (2005), The relationship between the Big Five personality traits and academic motivation, *Personality and Individual Differences*, Vol. 39, No. 3, pp. 557-567.
- Kondratuk, T.B., Hausdorf, P.A., Korabik, K., and Rosin, H.M. (2004), Linking career mobility with corporate loyalty: How does job change relate to organizational commitment?, *Journal of Vocational Behavior*, Vol. 65, No. 2, pp. 332-349.
- Kram, K.E. and Isabella, L.A. (1985), Mentoring alternatives: The role of peer relationships in career development, *Academy of Management Journal*, Vol. 28, No. 1, pp. 110-132.
- Lam, A. and Lundvall, B.A. (2004), The learning organisation and national systems of competence building and innovation, *Brunel University - Brunel Research in Enterprise, Innovation, Sustainability, and Ethics*, Uxbridge, West London (Working Paper No. 4).
- Larson, L.M., Rottinghaus, P.J., and Borgen, F.H. (2002), Meta-analyses of Big Six interests and Big Five personality factors, *Journal of Vocational Behavior*, Vol. 61, No. 2., pp. 217-239.
- Leonard-Barton, D. (1992), The factory as a learning laboratory, *Sloan Management Review*, Vol. 34, No. 1, pp. 23-38.

- Liden, R.C., Sparrowe, R.T., and Wayne, S.J. (1997), Leader-member exchange theory: The past and potential for the future, *Research in Personnel and Human Resource Management*, Vol. 15, pp. 47-119.
- Lubberman, J. and Bouwmeester, J. (2000), *De arbeidsmarkt voor brandweerofficieren*, Research voor Beleid, Leiden.
- Mael, F. and Ashforth, B.E. (1992), Alumni and their alma mater: A partial test of the reformulated model of organizational identification, *Journal of Organizational Behavior*, Vol. 13, No. 2, pp. 103-123.
- Masterson, S.S., Lewis, K., Goldman, B.M., and Taylor, M.S. (2000), Integrating justice and social exchange: The differing effects of fair procedures and treatment on work relationships, *Academy of Management Journal*, Vol. 43, No. 4, pp. 738-748.
- Mayer, D. (2006), The changing face of the Australian teaching profession: New generations and new ways of working and learning, *Asia-Pacific Journal of Teacher Education*, Vol. 34, No. 1, pp. 57-71.
- Mount, M.K. and Barrick, M.R. (1995), The big five personality dimensions: Implications for research and practice in human resources management. In Ferris, G.R. and Rollings (Eds), *Research in personnel and human resources management*, JAI Press, Greenwich, CT, Vol. 13, pp. 153-200.
- Mount, M. K., Barrick, M. R., Scullen, S. M., and Rounds, J. (2005), Higher order dimensions of the big five personality traits and the big six vocational interest types, *Personnel Psychology*, Vol. 58, No. 2, pp. 447-478.
- Nauta, A. (2007), *Voorbij het 'Boiling Frog'-syndroom*. [Beyond the 'Boiling Frog'-syndrome], Vossius Pers, Amsterdam.
- Nauta, A., Van Vianen, A., Van der Heijden, B., Van Dam, K., and Willemsen, M. (2009), Understanding the factors that promote employability orientation: The impact of employability culture, career satisfaction, and role breadth self-efficacy, *Journal of Occupational and Organizational Psychology*, Vol. 82, pp. 233-251.
- Nauta, A., Winthagen, T., and Stark, K. (2005), *Loopbaanbeleid bij brandweer en ambulance*, TNO, Hoofddorp.
- Ng, T.W.H., Eby, L.T., Sorensen, K.L., and Feldman, D.C. (2005), Predictors of objective and subjective career success: A meta-analysis, *Personnel Psychology*, Vol. 58, No. 2, pp. 367-408.
- Ng, T.W.H. and Sorensen, K.L. (2008), Toward a further understanding of the relationships between perceptions of support and work attitudes: A meta-analysis, *Group & Organization Management*, Vol. 33, No. 3, pp. 243-268.

- Ng, T.W.H., Sorensen, K.L., Eby, L.T., and Feldman, D.C. (2007), Determinants of job mobility: An integration and extension, *Journal of Occupational and Organizational Psychology*, Vol. 80, No. 3, pp. 363-386.
- Noe, R. A. (1990), An investigation of the correlates of career motivation, *Journal of Vocational Behavior*, Vol. 37, No. 3, pp. 340-56.
- O'Rourke, N., Hatcher, L, and Stepanski, E.J. (2005), A step-by-step approach to using SAS for univariate & multivariate Statistics, SAS, 2nd edition.
- Parker, P. (2000), *Career communities*, Doctoral Thesis, University of Auckland, New Zealand.
- Parker, P. and Arthur, M.B. (2000), "Careers, organizing and community", in Peiperl, M.A., Arthur, M.B., Goffee, R. and Morris, T. (Eds), *Career Frontiers: New Conceptions of Working Lives*, Oxford University Press, Oxford, pp. 99-121.
- Parker, P., Khapova, S. N., and Arthur, M. B. (2009), The intelligent career framework as a basis for interdisciplinary inquiry, *Journal of Vocational Behavior*, in press.
- Peske, H.G., Liu, E., Johnson, S.M., Kauffman, D., and Kardos, S.M. (2001), The next generation of teachers: Changing conceptions of a career in teaching, *Phi Delta Kappan*, Vol. 83, No. 4, pp. 304-312.
- Pil, F.K. and Leana, C.R, Free-agency versus high-involvement approaches to skill development. In Leana, C.R. and Rousseau, D.M. (Eds), *Relational wealth: The advantages of stability in a changing economy*, Oxford University Press, New York.
- Powell, W.W. (1990), Neither market nor hierarchy: network forms of organizations. In Staw, B. (Ed), *Research in organizational behaviour*, JAI Press, Vol. 12, pp. 295-336.
- Reed, R. and DeFillippi, R.J. (1990), Causal ambiguity, barriers to imitation and sustainable competitive advantage, *Academy of Management Review*, Vol. 15, No. 1, pp. 88-102.
- Riketta, M. (2005), Organizational identification: A meta-analysis, *Journal of Vocational Behavior*, Vol. 66, No. 2, pp. 358-384.
- Rodriquez, P.O., Green, M.T., and Ree, M.J. (2003), Leading generation X: Do the old rules apply?, *Journal of Leadership and Organizational Studies*, Vol. 9, No. 4, pp. 67-75.
- Rothwell, A., and Arnold, J. (2007), Self-perceived employability: Development and validation of a Scale, *Personnel Review*, Vol. 36, pp. 23-41.
- Rousseau, D.M. (1996), "Changing the deal while keeping the people", *Academy of Management Executive*, Vol. 10 No. 1, pp. 50-59.
- Rousseau, D.M. and Tijoriwala, S. (1998), Assessing psychological contracts: Issues, alternatives and measures, *Journal of Organizational Behavior*, Vol. 19, pp. 679-696.
- Saucier, G. (1994), Mini-markers: A brief version of Goldberg's unipolar Big-Five markers, *Journal of Personality Assessment*, Vol. 63, No. 3, pp. 506-526.

- Schettkat, R. (1996), *The Flow Analysis of Labour Markets*, Routledge, London.
- Schneider, B., Brief, A. P., and Guzzo, R. A. (1996), Creating a climate and culture for organizational Change, *Organizational Dynamics*, Vol. 24, pp. 6-9.
- Seibert, S.E. and Kraimer, M.L. (2001), The five-factor model of personality and career success, *Journal of Vocational Behavior*, Vol. 58, No. 1, pp. 1-21.
- Sjollema, S. (2007), Naar een nieuw psychologisch contract. [Towards a new psychological contract], *NSvP Journaal*, Vol. 3, No. 3, pp. 6–7.
- Sousa-Poza, A. and Henneberger, F. (2004), Analyzing job mobility with job turnover intentions: An international comparative study, *Journal of Economic Issues*, Vol. 38, No. 1, pp. 113-137.
- Sterns, H. L., and Dorsett, J. G. (1994), Career development: A life span issue, *Experimental Aging Research*, Vol. 20, No. 4, pp. 257-264.
- Stinglhamber, F. and Vandenberghe, C. (2003), Organizations and supervisors as sources of support and targets of commitment: A longitudinal study, *Journal of Organizational Behavior*, Vol. 24, No. 3, pp. 251-270.
- Sullivan, S.E. and Arthur, M.B. (2006), The evolution of the boundaryless career concept: Examining physical and psychological mobility, *Journal of Vocational Behavior*, Vol. 69, No. 1, pp. 19-29
- Valcour, P.M. and Tolbert, P.S. (2003), Gender, family and career in the era of boundarylessness: Determinants and effects of intra- and inter-organizational mobility, *International Journal of Human Resource Management*, Vol. 14, No. 5, pp. 768-787.
- Van Dam, K. (2005), Employee attitudes toward job changes: An application and extension of Rusbult and Farrell's investment model, *Journal of Occupational and Organizational Psychology*, Vol. 78, pp. 253-272.
- Van Dam, K., Oreg, S., and Schyns, B. (2008), Daily work contexts and resistance to organizational change: The role of leader–member exchange, development climate, and change process characteristics, *Applied Psychology, An International Review*, Vol. 57, pp. 313-334.
- Van der Heijde, C. M., and Van der Heijden, B. I. J. M. (2006), A competence-based and multidimensional operationalization and measurement of employability, *Human Resource Management*, Vol. 45, pp. 449-476.
- Van der Heijden, B. I. J. M. (2000), The development and psychometric evaluation of a multidimensional measurement instrument of professional expertise, *High Ability Studies*, Vol. 11, pp. 9-39.
- Van der Heijden, B. I. J. M., De Lange, A.H., Emerouti, E., and Van der Heijde, C.M. (2009), Age effects on the employability – career success relationship, *Journal of Vocational Behavior*, Vol. 74, No. 2, pp. 156-164.

- Van Hooft, E.A.J, Born, M.Ph., Taris, T.W., Van Der Flier, H., and Blonk, R.W.B. (2004), Predictors of job search behavior among employed and unemployed people, *Personnel Psychology*, Vol. 57, No. 1, pp. 25-59.
- Van Knippenberg, D. and van Schie, E.C.M. (2000), Foci and correlates of organizational identification, *Journal of Occupational and Organizational Psychology*, Vol. 73, No. 2, pp. 137-147.
- Van Maanen, J., and Barley, S. R. (1984), Occupational communities: Culture and control in organizations. In B. M. Staw (Ed.), *Research in Organizational Behavior* (Vol. 6, pp. 287-365), Greenwich, CT: JAI Press.
- Veum, J.R. (1997), Training and job mobility among young workers in the United States, *Journal of Population Economics*, Vol. 10, No. 2, pp. 219–233.
- Wayne, S.J., Liden, R.C., Kraimer, M.L., and Graf, I.K. (1999), The role of human capital, motivation and supervisor sponsorship in predicting career success, *Journal of Organizational Behavior*, Vol. 20, No. 5, pp. 577-595.
- Wayne, S.J., Shore, L.M., and Liden, R.C. (1997), Perceived organizational support and leader-member exchange: a social exchange perspective, *Academy of Management Journal*, Vol. 40, No. 1, pp. 82–111.
- Weick, K. E. (1995), *Sensemaking in organizations*, Sage Publications Inc.
- Weick, K. E. (1996), Enactment and the boundaryless career: Organizing as we work, *The boundaryless career: A new employment principle for a new organizational era*, pp. 40-57.
- Weick, K.E. and Berlinger, L.R. (1989), Career improvisation in self-designing organizations. In: Arthur, M.B., Hall, D.T., and Lawrence, B.S. (Eds), *Handbook of career theory*, University Press, Cambridge, New York, pp. 313-328.
- Wiley, N. (1988), The micro-macro problem in social theory, *Sociological Theory*, Vol. 6, No. 2, pp. 254-261.
- Williams, A.P. (2001), A belief-focused process model of organizational learning, *Journal of Management Studies*, Vol. 38, No. 1, pp. 67-85.
- Winter, R. and Jackson, B. (2006), State of the psychological contract: Manager and employee perspectives within and Australian credit union, *Employee Relations*, Vol. 28, No. 5, pp. 421-434.
- Wrzesniewski, A., McCauley, C., Rozin, P., and Schwartz, B. (1997), Jobs, careers, and callings: People's relations to their work, *Journal of Research in Personality*, Vol. 31, No. 1, pp. 21-33.
- Yang, B., Watkins, K.E., and Marsick, V.J. (2004), The construct of the learning organization: Dimensions, measurement, and validation, *Human Resource Development Quarterly*, Vol. 15, No. 1, pp. 31-55.

Websites

http://www.brandweer.nl/organisatie/de_brandweer_in_uw/veiligheidregio's-, consulted on June 8th 2009