KAISA KIRVES

Perceived Employability

Antecedents, trajectories and well-being consequences

ACADEMIC DISSERTATION
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UNIVERSITY OF TAMPERE

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Helsinki, March 2014 Kaisa Kirves

ABSTRACT IN ENGLISH

This dissertation consists of three studies and they conceive perceived employability (PE) as a personal resource along the lines of conservation of resources (COR) theory. PE refers to an employee's perception of how easy it is to find new employment. Following the assumptions of COR theory, antecedents, trajectories and well-being consequences of PE were investigated. Moreover, the relation between PE and perceived job insecurity was examined with specific attention given to contract type. The dissertation uses two different Finnish datasets. The first longitudinal dataset was obtained as part of an interdisciplinary research project, *Are Temporary Workers a Disadvantaged group?*, and was gathered among employees in two universities between 2008 and 2010 (n_{Time1} = 2,137, n_{Time2} = 1,314, n_{Time3} = 926). The second cross-sectional dataset was part of the *Quality of Work Life Survey (QWLS)* collected in 2008 (n = 4,392). The university sample was used in Studies I-III and the QWLS sample was used in Study III. The main results revealed, first, that contract type, perceived mobility and optimism interacted in the prediction of PE, and this provided valuable added insight into how PE can be enhanced. More specifically, perceived mobility was an important antecedent of PE only for permanent employees. Second, change in PE across two years was heterogeneous and nonlinear resulting in four trajectories. The stable high PE trajectory was the most common. Third, PE was positively related to several indicators of well-being (i.e., both context-free and work-related, both negative and positive aspects, and both high and low activation). Moreover, an increase in PE was related to an increase in vigor at work among one small trajectory showing non-linear change. Fourth, the positive relationship between PE and well-being was independent of contract type and level of perceived job insecurity. Altogether these findings suggest that PE can be considered as a personal resource because it is related with well-being and is amenable for changes. However, the trajectory analysis also indicated that the level of PE needs to be relatively high before such relationships occur. Furthermore, change in PE may not have a strong effect on change in well-being, which implies that the importance of PE lies more on its function of maintaining well-being. To conclude, from the perspective of employees' well-being, PE seems to be a beneficial resource to be invested in.

ABSTRACT IN DUTCH

Dit proefschrift bestaat uit drie studies. In deze studies zien we gepercipieerde inzetbaarheid als een persoonlijke hulpbron in lijn met de conservation of resources (COR) theorie. We onderzoeken de onderliggende assumpties van de COR theorie met betrekking tot antecedenten, trajecten en welzijnsgerelateerde gevolgen. Bovendien wordt de relatie tussen gepercipieerde inzetbaarheid en jobonzekerheid onderzocht met specifieke aandacht voor het type contract van een werknemer. Het proefschrift maakt gebruik van twee Finse datasets. De eerste dataset is longitudinaal en kadert binnen het interdisciplinaire onderzoeksproject 'Zijn tijdelijke werknemers een benadeelde groep?'. Data werden verzameld tussen 2008 en 2010 bij werknemers van twee universiteiten ($n_{Tijdstip1}$ = 2,137, $n_{Tijdstip2}$= 1,314, $n_{Tijdstip3}$= 926). De tweede dataset is cross-sectioneel en maakt deel uit van de 'Kwaliteit van Werkleven Studie' (KWLS). Data werden verzameld in 2008 bij een representatieve steekproef van de Finse bevolking (n = 4,392). De universiteitssteekproef werd gebruikt in studies I-III en de KWLS-steekproef werd gebruikt in studie III. De resultaten zijn als volgt. Ten eerste interageren type contract, gepercipieerde mobiliteit en optimisme in de voorspelling van gepercipieerde inzetbaarheid. Dit verduidelijkt hoe gepercipieerde inzetbaarheid verhoogd kan worden: gepercipieerde mobiliteit is een antecedent van gepercipieerde inzetbaarheid voor werknemers met een contract van onbepaalde duur. Ten tweede is de verandering in gepercipieerde inzetbaarheid over twee jaar heterogeen en non-lineair, wat resulteert in vier verschillende 'trajectgroepen'. Het traject gekenmerkt door een hoge, stabiele gepercipieerde inzetbaarheid is meest voorkomend. Ten derde is gepercipieerde inzetbaarheid positief gerelateerd aan verschillende indicatoren van welzijn (nl. werkgerelateerde en contextonafhankelijke, positieve enals negatieve aspecten, en lage en hoge activatie). Bovendien is een stijging in gepercipieerde inzetbaarheid gerelateerd aan een stijging in vitaliteit bij de trajectgroep met een non-lineaire verandering over de tijd. Ten vierde is het positieve verband tussen gepercipieerde inzetbaarheid en welzijn onafhankelijk van het type contract en de mate van gepercipieerde jobonzekerheid. Samenvattend suggereren deze resultaten dat gepercipieerde inzetbaarheid gezien kan worden als een persoonlijke hulpbron: het is gerelateerd aan welzijn en onderhevig aan verandering. Echter, de mate van gepercipieerde inzetbaarheid moet relatief hoog zijn alvorens de relatie met welzijn naar voor komt. Bovendien heeft een verandering in gepercipieerde inzetbaarheid geen sterk effect op een verandering in welzijn, wat impliceert dat het belang van gepercipieerde inzetbaarheid eerder ligt in het behouden van welzijn. Besluitend: gepercipieerde inzetbaarheid is een hulpbron met specifiek belang voor het behoud van welzijn.

CONTENTS

LIST OF ORIGINAL PUBLICATIONS....8

1. INTRODUCTION....9

1.1 Setting the scene....9

1.2 Perceived employability....10

1.2.1 Definition of PE....10

1.2.2 PE as a personal resource in the framework of conservation of resources theory....11

1.2.3 Antecedents of PE....12

Types of antecedents....12

Contract type....13

Perceived mobility....14

Optimism....15

Interactions....15

1.2.4 Consequences of PE for well-being....16

Well-being concept in this study....16

Empirical evidence....18

1.2.5 Change in PE: Trajectories....18

1.3 Perceived job insecurity in the context of PE....20

1.3.1 Perceived job insecurity: definition and consequences....20

1.3.2 The relationship between PE and perceived job insecurity....22

1.4 The moderator role of contract type....23

1.4.1 Psychological contract theory....23

1.4.2 Breach hypotheses....24

1.5 Aims and hypotheses 26
2. METHODS 30
2.1 Participants and procedure 30
2.2 Sample attrition 31
2.3 Measures 32
2.3.1 Perceived employability 32
2.3.2 Antecedents of perceived employability 33
2.3.3 Consequences for well-being 33
2.3.4 Perceived job insecurity 34
2.4 Data analyses 34
3. OVERVIEW OF THE RESULTS 36
3.1 Study I 36
3.2 Study II 36
3.3 Study III 37
4. DISCUSSION 39
4.1 Main findings concerning PE as a personal resource 39
4.1.1 PE and well-being 39
4.1.2 Change in PE 40
4.1.3 Antecedents of PE 41
4.2 Methodological evaluation of the study 42
4.3 Directions for future research 44
4.4 Implications of the study 45
TIIVISTELMÄ 47
REFERENCES 49

LIST OF ORIGINAL PUBLICATIONS

Study I Kirves, K., Kinnunen, U., & De Cuyper, N. (2013). Contract type, perceived mobility and optimism as antecedents of perceived employability. *Economic and Industrial Democracy*. Advance online publication. doi: 10.1177/0143831X13486702

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Study III Kirves, K., De Cuyper, N., Kinnunen, U., & Nätti, J. (2011). Perceived job insecurity and perceived employability in relation to temporary and permanent workers' psychological symptoms: A two samples study. *International Archives of Occupational and Environmental Health, 84*, 899–909. doi: 10.1007/s00420-011-0630-y

1. INTRODUCTION

1.1 Setting the scene

The global economy has been turbulent during the 21st century with first the economic boost followed by an economic crisis. Organizations need to stay profitable despite the changes in the economy, which calls for flexibility also in terms of personnel staffing (DiRenzo & Greenhaus, 2011). This, in turn, has often implied the use of temporary contracts, restructuring and downsizing. In Finland, the share of temporary contracts had been above the average level of the EU for the last ten years (14.5–17.9%; Eurostat, 2013) and the unemployment rate increased from 6.4% (2008) to 8.2% (2009) in only one year (Statistics Finland, 2013).

This development calls for flexibility also from the employees. Quite often they can no longer rely on life-long employment in the same organization (DiRenzo & Greenhaus, 2011). Employment contracts are nowadays insecure, as in the case of temporary employment, and hence many workers also feel insecure about their jobs. Insecurity is prevalent in all areas and across all levels of work. As a result, employees may feel that—instead of staying loyal to the current organization—they need to, or are forced to, focus on controlling their own careers also across organizational boundaries (DiRenzo & Greenhaus, 2011). In this context, the concept of employability is important.

At the level of the individual, employability refers to the individual's possibilities of acquiring and maintaining employment (e.g., Hillage and Pollard, 1998). Although different conceptualizations of employability exist, they all argue that high employability is a new form of security, called employment security, which provides control over one's career (Forrier & Sels, 2003b; Fugate, Kinicki, & Ashforth, 2004). The general idea is that individuals with high employability have assets (e.g., knowledge, skills, abilities, and attitudes), which are valued and needed on the labor market (e.g., Fugate et al., 2004; Van der Heijde & Van der Heijden, 2006). Thus these employees have something to offer to the employers, which keep their position secured on the labor market and they can cope with today's requirement for flexibility.

Recently the *perception* of one's own employability has been the focus in psychological employability research. It is argued that this view is important, because behavior, feelings, and thoughts are often affected by the perception of a reality, rather than the reality itself (Katz & Kahn, 1978; Lazarus & Folkman, 1984). For example, individuals who perceive themselves as employable, regardless of how easy or difficult it would be for them to actually get a job, are likely to have a positive attitude towards flexibility. The same phenomenon has already been shown regarding to job insecurity (e.g., Roskies & Louis-Guerin, 1990); it is the subjective evaluation of the continuity of one's job rather than the objective conditions which matters.

Thus this study focuses on *perceived employability* (abbreviated hereafter as PE), which refers to *an employee's perception of how easy it is to find new employment* (Berntson, Sverke, & Marklund, 2006; Rothwell & Arnold, 2007). The aim is to investigate PE as a personal resource that is assumed to give resilience to cope with changes on the current labor market. Generally, personal resources have a positive effect on well-being, they are amenable to changes, and they buffer against job demands. In order to test whether PE

fulfills these characteristics following questions were examined: 1) is PE positively related to well-being, 2) how PE changes over time, and 3) is PE negatively related to job insecurity and does it buffer against the negative outcomes of job insecurity. Additionally, two questions were investigated in order to have a more elaborated picture of PE: 4) how individual and situational factors contribute to PE, and 5) whether contract type moderates the associations between PE, job insecurity, and well-being.

The next chapters of this introduction will provide the definitions of key concepts, share current research knowledge, point out gaps for further research, and specify the aims of this study. More specifically, the introduction starts with defining PE and describing earlier studies on antecedents, consequences, and change in PE. After that, the concept of perceived job insecurity and its relationship to PE is introduced. Finally, contract type is presented as a possible moderator. The introduction ends with specifying the aims of this study in greater detail.

1.2 Perceived employability

1.2.1 Definition of PE

The use of the concept "employability" dates back to the beginning of the 20th century (Gazier, 2001). Since then it has been used at macro, meso, and micro perspectives, which have made its meaning fuzzy and difficult to grasp.

At the macro level, employability has been included in different European and national level policy documents (see Berntson, 2008), which aim to improve the workforce's overall employability in order to decrease the unemployment rates. From the meso level perspective, organizations have been interested in increasing employability of their staff in order to be prepared for flexibility demands and maintaining the business profitable (Forrier & Sels, 2003a). At the individual level, several authors have tried to understand which factors determine the level of employability and what it means for individuals' careers, security perceptions, and well-being. Among these authors are Berntson (2008), De Cuyper and De Witte (2008), Forrier and Sels (2003a), Fugate and his colleagues (2004), Harvey (2001), Hillage and Pollard (1998), McQuaid and Lindsay (2005), Rothwell and Arnold (2007), de Grip, van Loo, & Sanders (2004), and Van der Heijde and Van der Heijden (2006).

From this impressive list of authors it is clear that several approaches to employability exist at the individual level. The approach that has been recently captured much scholarly attention is *perceived employability (PE)*, which is also used in this study and defined as *an individual's perception of how easy it is to find new employment* (Berntson et al., 2006; Rothwell & Arnold, 2007). Although the roots of this concept lies in research on perceived ease of movement and dates back to the 1950's (March & Simon, 1958; see also De Cuyper, 2008), the first measurements based on this latest definition have been advanced in Dutch by De Witte (1992) and used later in an international project (Guest, Isaksson, & De Witte, 2010). The first English version was developed by Berntson and his colleagues (2006). Within this definition four aspects are important [see Vanhercke, De Cuyper, Peeters, & De Witte (2013) for similar arguments]. These will be discussed next.

First, the definition brings individuals' *perception* to the fore because it has been shown that people often behave, feel, and think based on their perceptions rather than the objective reality (Katz & Kahn, 1978; Lazarus & Folkman, 1984). In the context of PE, this

implies, for example, that individuals' reactions towards downsizing are more dependent on how they perceive their opportunities on the labor market than, for example, the level of their qualification and expertise per se.

Second, the perceptions individuals make concern how *easy* it is to find a new job or *possibilities* of new employment. Thus this definition does not explicitly state why individuals perceive themselves as employable. In contrast, the competence-based approach (Van der Heijde & Van den Heijden, 2006) and the dispositional approach (Fugate et al., 2004) underline the significance of abilities and proactive attitudes respectively (Vanhercke, De Cuyper et al., 2013). The PE approach assumes that competences and dispositions are antecedents of PE with several other factors contributing to perceptions (for a detailed discussion, see chapter 1.2.3).

Third, PE can be investigated in any of the three phases of the career: 1) when searching a job after graduation, 2) when searching a job while unemployed, and 3) when searching a new job while employed (Hillage & Pollard, 1998). In the present study the focus is on the third phase, that is, on *employed*. The reason is that the economic crisis and layoffs it has become more and more important also for the employed, and not only for graduates and unemployed, to be able to get a new job.

Fourth, when perceiving one's own opportunities of getting *new employment*, the meaning of new employment can be categorized along two dimensions. First, the new job can be *equal or better* than the current one (i.e., quantitative and qualitative employability; Berntson, 2008; De Cuyper & De Witte, 2010). Second, the new job can be with *the same or another employer* (i.e., internal and external employability; Rothwell & Arnold, 2007; De Cuyper & De Witte, 2010). The meaning and the consequences of these different approaches are not clear. Thus, although the definition of PE in this study does not clearly state along these two dimensions which kind of PE is evaluated, the positioning refers to an equal job with another employer (see section 2.3), that is, quantitative external employability. Quantitative external PE can be argued to be the most relevant in the current era of economic crisis and in the context of job insecurity and temporary employment, which all are in the focus of this study.

1.2.2 PE as a personal resource in the framework of conservation of resources theory

PE can be viewed within conservation of resources (COR) theory (Hobfoll, 1989, 2001). COR theory is based on the argument that "individuals strive to obtain, retain, protect, and foster those things that they value" (Hobfoll, 2001, p. 341). These valued things are labeled as resources, which are divided into four groups: objects (e.g., house), conditions (e.g., having a job), personal characteristics (e.g., self-efficacy), and energies (e.g., time and money). COR theory states that stress will occur if resources are lost, threatened with loss or new resources are not gained after investment.

Resources tend to accumulate over shorter and longer time periods, so that they ultimately form resource caravans (Hobfoll, 2001). This means that an individual with one major resource typically also has other resources. Conversely, absence of one major resource is linked with lack of other resources. Moreover, acquiring a new resource will typically induce also acquirement of other resources (gain spirals) and, vice versa, losing a resource will accelerate further resource loss (loss spirals). Thus the level of a certain resource can increase or decrease over time as a result of a gain or a loss, respectively (Hobfoll, Johnson, Ennis, & Jackson, 2003). Individual resources are strongly linked to

well-being and health, as noted in both theoretical resource models and in empirical findings (for overviews, see Hobfoll, 2002; Mäkikangas, Feldt, Kinnunen, & Mauno, 2013). Individuals with many resources are more adaptive and can solve life difficulties and achieve their goals more successfully than those with fewer resources (Hobfoll, 2002). This leads to lower levels of strain, which in turn, enhances well-being.

According to Hobfoll and his colleagues (2003), personal resources refer generally to individuals' sense of their ability to control and impact upon their environment successfully. Earlier scholars have considered PE as such a resource because PE is assumed to support individuals' ability to cope with change and uncertainty by providing feelings of control and possibilities to act in the surrounding environment (Hobfoll et al., 2003; De Cuyper, Mäkikangas, Kinnunen, Mauno, & De Witte, 2012). Furthermore, as self-efficacy is known to be a personal resource (Hobfoll, 2002) and PE is closely related to self-efficacy (Berntson, Näswall, & Sverke, 2008), it is likely that also PE belongs to this category of resources. However, empirical evidence on the question whether PE develops and acts in a way that is expected in the light of COR theory is still lacking. Thus, this study critically evaluates what can be assumed based on COR theory and whether the results obtained support these assumptions.

1.2.3 Antecedents of PE

When PE is viewed as a personal resource, i.e., it is assumed to have the capacity to support individuals, then an important question is how employees' perceptions of their own employability can be enhanced. Consequently, this study investigates a set of possible antecedents of PE. The next chapter provides an overview to this topic.

Types of antecedents

Based on both the theoretical and empirical literature of PE (Berntson, 2008; Forrier, Sels, & Stynen, 2009; Wittekind, 2007) and other individual employability approaches (Brown, Hesketh, & Williams, 2003; Hillage & Pollard, 1998; McQuaid & Lindsay, 2005) both situational and individual factors are important to employability perceptions.

Situational factors are contextual factors that are beyond an individual's control. Labor market structure and opportunities and organizational practices fall into this category (Berntson, 2008; Forrier et al., 2009; Hillage & Pollard, 1998; McQuaid & Lindsay, 2005). More precisely, the global economic situation, the number of jobs available, the type of job contract, and opportunities for personal career planning are examples. The study by Berntson and his colleagues (2006) showed that PE was higher among employees who had less physical/chemical exposure at work and lived in metropolitan areas.

Individual factors, in contrast, are personal factors that are tied to an individual. Several authors have referred to these as determinants of (perceived) employability (DeFillippi & Arthur, 1994; de Grip et al., 2004; Forrier et al., 2009; Fugate et al., 2004; Hillage & Pollard, 1998; Kluytmans & Ott, 1999; McQuaid & Lindsay, 2005; Van der Heijde & van der Heijden, 2006). Such factors have been described by the concept of movement capital, which aim to integrate the earlier literature and offer a more coherent framework to understand "the set of individual characteristics that influence the chances of mobility in the labor market" (Forrier et al., 2009, p. 742). Moreover, the conceptual framework by Peeters et al. (2013) suggests that movement capital consists of human capital (i.e.,

knowledge, skills, and attitudes) and social capital (i.e., strength and size of social network) factors that are evaluated in relation to job, career and development. In addition, dispositions (e.g., locus of control, self-esteem) have been suggested to affect the perception of employability based on the wider theories of perceiving situations (see Berntson, 2008, pp. 11–12). Earlier empirical studies have showed that PE is dependent on education, competence development, and current level of job-related skills (Berntson et al., 2006; Wittekind, Raeder, & Grote, 2010).

Still some of the antecedents of PE proposed in earlier studies (see Forrier et al., 2009; Fugate et al., 2004; Griffeth et al., 2005; Wittekind et al., 2010) fall in between these two categories: they have elements of both situational and individual factors. An example of such factors is perceived willingness to change jobs or tasks, which was found to predict PE in the study by Wittekind et al. (2010). Willingness to change jobs is an antecedent of PE as those willing to change jobs will have a broader range of opportunities. Moreover, willingness to change jobs is based on both situational (e.g. economic conditions, wage setting, family situation) and individual (e.g. self-awareness, openness to change) factors (Forrier et al., 2009). Someone who is open to changes is more likely to be willing to change jobs, though perhaps less so if an organization implements a pay structure based on tenure.

As a result, in this study, the antecedents of PE are seen as forming a *continuum* from situational factors to individual factors. Accordingly, contract type, perceived mobility, and optimism were selected as the antecedents of PE to reflect the full range of factors from the continuum contributing to PE. These antecedents and the rationale for selecting them are explained next.

Contract type

Contract type (i.e., permanent vs. temporary employment) reflects the labor market structure and is thus considered as a situational factor potentially influencing PE as described by Berntson (2008) and McQuaid and Lindsay (2005). In this study, temporary employment refers to employment of limited duration (OECD, 2002). More specifically, the focus is on temporary employment contracts that have a fixed termination date (i.e., fixed-term contracts). Other types of temporary work, such as temporary agency work and casual employment, are not included (see De Cuyper, de Jong et al., 2008; Guest, Isaksson, & De Witte, 2010). This selection was made because the majority of the temporary employees in Finland are employed on fixed-term contracts (Lehto & Sutela, 2008).

A huge amount of studies has investigated how contract type is related to job characteristics, attitudes, behavior, and well-being (e.g., Krausz, Brandwein, & Fox, 1995; Virtanen et al., 2005; Saloniemi, Virtanen, & Vahtera, 2004). In contrast, only the study by Berntson et al. (2006) has examined how contract type is related to the level of personal resources, namely PE. This study wanted to give further insight to the resources (namely PE) among permanent and temporary employees.

Conflicting theoretical views exist on whether permanent or temporary employees have higher PE. The boundaryless career literature (see e.g., Arthur & Rousseau, 1996) gives one perspective to look at this relationship. The central idea of the boundaryless career is that individuals are willing to change jobs, companies, and even occupations during their working life (Mirvis & Hall, 1994). According to Mirvis and Hall (1994), temporary employment can be seen as a one form of the boundaryless career. They also suggest that the boundaryless career can induce new opportunities, relationships, and networks. These,

in turn, are factors that are likely to enhance PE. Consequently, it could be argued that PE is higher among temporary than permanent employees. Furthermore, Marler, Barringer, and Milkovich (2002) found in their study a subgroup of higher skilled employees who voluntarily accepted temporary employment because of challenging tasks that enhance their competencies and skills. This, in turn, is positively related to employability of these temporary employees and allows them move more flexibly on the labor market.

Instead, the division into core and peripheral employees (Atkinson, 1984) suggests that PE is higher among permanent employees. In this segmentation theory, permanent employees are considered as the core labor force, which brings along good working conditions, employment stability, and chances of advancement. These are all factors that may strengthen their profiles and labor market position and thus their employability. In contrast, in this view temporary employees typically belong to the periphery of the labor market, and they are therefore in a weak position vis-à-vis future employers, which, in turn, may lead to lower employability.

The results of empirical studies point, although rather weakly, to the direction that PE is higher among temporary than permanent employees. Berntson and his colleagues (2006) addressed this issue with a large dataset and concluded that among Swedish employees the type of employment did not contribute in explaining PE in the final models but the baseline correlation indicated that PE was slightly higher among temporary than permanent employees ($r = –.03$, $p < .05$). However, this relation was evident only when the overall level of PE was higher (i.e., during economic prosperity). Other studies have not directly studied the relationship between contract type and PE but they have still reported the baseline correlation. Based on the information from these correlation tables, only the study by De Cuyper, De Witte, Kinnunen, and Nätti (2010) reported a small positive association ($r = .09$, $p < .01$) between temporary employment and PE among Finnish employees. In contrast, other studies did not find statistically significant correlations between contract type and PE among Belgian employees (De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008; De Cuyper, Notelaers, & De Witte, 2009). These results may indicate, in regard to the association between temporary employment and PE, that nowadays—as temporary employment is more common in all areas of work compared to the time in the 1980's when the theory of segmentation theory was developed—temporary employees cannot be viewed as belonging to the periphery but instead realizing their possibilities to move flexibly on the labor market. The non-significant results, in turn, may reflect the heterogeneity of temporary employees. They have accepted temporary employment for different reasons and consequently their reactions (e.g., in relation to PE) may also differ (e.g., De Jong, De Cuyper, De Witte, Silla, & Bernhard-Oettel, 2009).

Perceived mobility

Perceived mobility refers to employees' own perceptions of their possibilities to move to another place because of a new job (Griffeth, Steel, Allen, & Bryan, 2005). On the one hand, this perception is based on situational circumstances: physical (e.g. geographic distances), family (e.g., children, spouse in permanent employment), financial (e.g., mortgages), and other (e.g., community participation) factors. On the other hand, individual dispositions may also have an effect. For example, those with an open attitude or those who are extremely ambitious may perceive their perceived mobility to be high despite the situational barriers. Perceived mobility can be seen as the boundaries against which PE is evaluated. If the perception of one's own mobility is poor, then the field of potential job

alternatives shrinks accordingly (Griffeth et al., 2005). This factor was expected to be crucial for the PE of university employees in Finland—the main focus group in the present study—because the geographical distances between Finland's 19 universities and research centers are large on average. Additionally, highly educated employees are most likely interested in jobs corresponding to their level of education. The only study investigating perceived mobility is the one by Griffeth et al. (2005). The authors concluded that perceived mobility was positively associated with PE ($r = .25$, $p < .05$, $n = 443$). Although this cross-sectional finding supports the idea that perceived mobility increases employment opportunities, and thus also PE, the current study aimed to replicate this result with a longitudinal sample. Moreover, the study by Griffeth et al. was conducted in the US where the overall mobility of employees is higher than in most European countries. Therefore, this current study also adds insight to the generalization of the finding into other contexts.

Optimism

Dispositions may be especially significant when studying *employed* persons' PE, whereas movement capital factors may play a minor role in their PE evaluations. This is because employees are probably not generally actively seeking new jobs and thus it is not necessary for them to explicitly evaluate their movement capital factors on the current labor market. Following this reasoning, the current study focuses on a disposition (i.e., optimism), instead of movement capital factors, as a potential individual factor contributing to PE. Moreover, there are few studies on the relationship between dispositions and PE, even though the relationship is often hinted at.

Optimism refers to a tendency to believe that good instead of bad outcomes will occur in one's life (Scheier & Carver, 1985, 1992). The reason for selecting optimism is two-fold. First, both PE and optimism are oriented towards the future. The difference is that optimism concerns life in general and PE is work-related. Second, although optimistic life orientation as a disposition is developed in childhood, it can be further developed in adulthood (Feldt, Mäkikangas, & Aunola, 2006). Thus, optimism is amenable to some changes and therefore has resonance as an antecedent of PE.

Based on previous literature, optimism supports an active and adaptive career orientation and is thus expected to foster PE (Forrier et al., 2009; Fugate et al., 2004). More specifically, optimism is part of the self-regulation of behavior and adaptability (Fugate et al., 2004; Scheier & Carver, 1992): individuals' expectations of the results of their actions determine whether they continue to strive or instead give up (Scheier & Carver, 1992). Optimistic individuals have the tendency to perceive their goals to be attainable and hence continue to pursue them even in the face of adversity (Scheier & Carver, 1985, 1992). In addition, optimistic individuals may perceive more opportunities in the workplace, and they see changes in the career as challenges instead of threats (Fugate et al., 2004). In an empirical study, optimism was positively related to respondents' confidence of securing an equally attractive job in two years (Knau & Knardahl, 2008).

Interactions

In addition to the direct effects, also possible interaction effects may be important. This is based on the interactionist perspective, which claims that an individual's perception—like PE—is determined by the interplay between different situational and individual factors

(Berntson, 2008; Ekehammar, 1974; Forrier et al., 2009; McQuaid & Lindsay, 2005). This perspective means, for example, that when good times prevail on the labor market, individuals with high competence perceive themselves to be easily re-employed (high PE) but in time of recession these same individuals may no longer believe in their chances of securing a new job because of tough competition (low PE). However, earlier studies have not investigated these interactions and thus this study offers new knowledge about the dynamics between situational and individual antecedents of PE. As the interactions are specific to the concepts in question, the elaborated description of the interactions between contract type, perceived mobility, and optimism can be read from the original publication.

1.2.4 Consequences of PE for well-being

As stated earlier, according to COR theory (Hobfoll, 2002), employees with high PE are able to cope with change. Thus highly employable individuals' strain levels are expected to be lower and they are supposed to report better well-being.

Well-being concept in this study

In this study, psychological well-being is understood along Warr's (1987, 1990, 2013) model, which offers a broad perspective on well-being via three aspects. *First*, Warr distinguishes between context-free and domain-specific well-being. The former refers to life in general, and latter refers to one domain of life, such as one's job. As domain-specific well-being is part of context-free well-being but narrower, these concepts are interrelated. However, Warr (1987, 2007) argues that the antecedents of the different forms of well-being are partly different and thus the scope of well-being needs to be selected carefully. *Second*, the framework states that an individual's well-being cannot be solely defined as lack of ill-being (Hakanen, 2005; Keyes, 2005). In other words, well-being should be investigated from both the negative and positive sides. Warr has labeled this as a continuum from displeasure-to-pleasure. *Third*, Warr's model recognizes the difference between something being "satisfactory" and "outstanding". While the former refers to a relatively passive acceptance that something is adequate, the latter refers to actively enjoying it. The model formulates this distinction at a general level as a continuum from low to high mental activation. These two continuums (displeasure-to-pleasure and low-to-high mental activation) divide well-being into four categories, namely, activated negative, activated positive, low-activation positive, and low-activation negative well-being. Figure 1 illustrates these categories and presents the well-being constructs used in this study. Next, these constructs are evaluated within Warr's framework.

Context-free vs. domain-specific. PE is a personal resource tight to the work-domain and thus it is likely that PE is related to well-being at work. The relation between PE and context-free well-being is also plausible due to the spillover effect from well-being at work to well-being in life more generally (Danna & Griffin, 1999). When trying to understand PE as a personal resource, it is also important to know its impact and limits, that is, whether or not it has an influence also outside the work or not. As a consequence, this study investigates both context-free and domain-specific well-being. More specifically, context-free well-being is conceptualized as *psychological symptoms*, which are related to stress, such as, fatigue, apathy, lack of energy, tenseness, nervousness, and irritability (Lehto & Sutela, 2008). Domain-specific well-being is represented by vigor at work, job satisfaction, and job

exhaustion. *Vigor at work* refers to having high levels of energy and mental resilience while working (Schaufeli, Bakker, & Salanova, 2006). *Job satisfaction* covers individuals' global feeling about their job (Spector, 1997). *Job exhaustion* refers to lack of energy and a sense that emotional resources are being fully consumed by work (Maslach, Jackson, & Leiter, 1996).

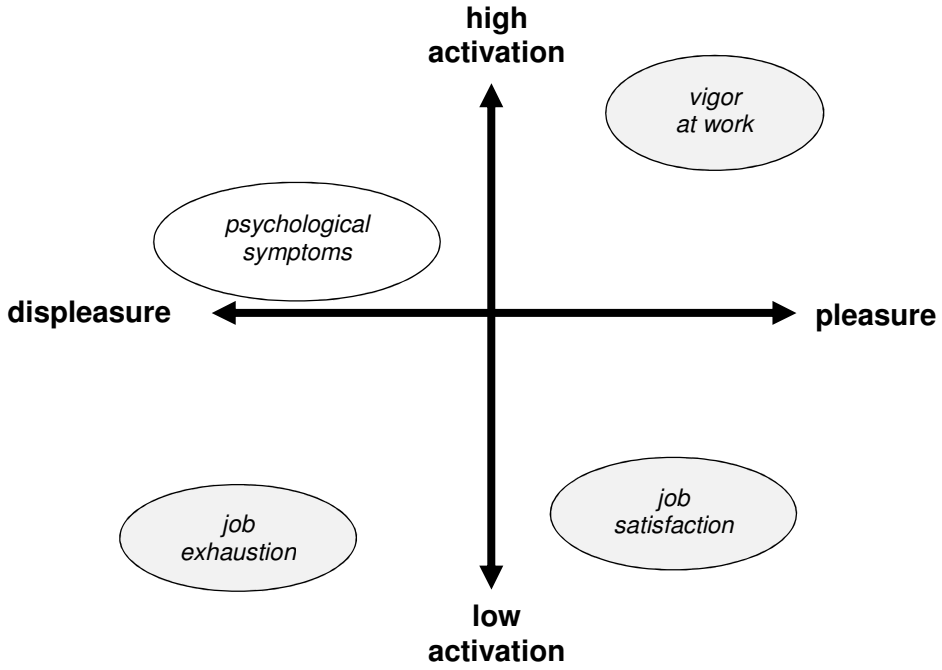

Figure 1 Well-being concepts in this study from the perspective of Warr's model (2013)

Displeasure-to-pleasure. The literature of job exhaustion and vigor at work has shown that these concepts are independent and not only endpoints of the same energy construct (Demerouti, Moster, & Bakker, 2010; Mäkikangas, Feldt, Kinnunen, & Tolvanen, 2012). PE as a personal resource is likely to lead to optimal well-being. Thus it is possible that although the association between PE and vigor at work is positive, this does not imply a negative relationship between PE and job exhaustion. Consequently, it is important to include both concepts in the same study. This distinction gives further insight about PE as a resource: is PE related only to higher levels of positive well-being or lower levels of negative well-being, or are both processes possible?

Low-to-high activation. The difference between satisfactory (low activation) and outstanding (high activation) is reflected best in the concepts of job satisfaction and vigor at work. Job satisfaction refers to a passive agreement that one's job is good enough while vigor at work reflects active enjoyment and enthusiasm. From the perspective of PE this distinction further elaborates the effects of this resource: are the positive consequences of PE something that makes an individual to be satisfied or can it contribute to have even better feelings?

Empirical evidence

Empirical studies have shown that PE is positively linked to work-related low- and high-activated positive well-being, that is, to *job satisfaction* (De Cuyper al., 2010) and *work engagement* (De Cuyper, Bernhard-Oettel et al., 2008). However, mixed results have been reported by De Cuyper, Raeder, Van der Heijden, and Wittekind (2012) who studied the relationship between PE and low-activated negative well-being, that is, *burnout*. They concluded that PE was negatively related to depersonalization (i.e., a cynical, negative, detached attitude towards the job) but PE did not explain the variance in emotional exhaustion or reduced personal accomplishment.

Moreover, positive relationships between PE and context-free well-being have been established. Studies have demonstrated a positive relation between PE and *global health* (Berntson & Marklund, 2007; De Cuyper et al., 2010), *mental well-being* (Berntson & Marklund, 2007), and *life satisfaction* (De Cuyper, Bernhard-Oettel et al., 2008; De Cuyper, Van der Heijden, & De Witte, 2011). Moreover, negative associations have been found between PE and *psychological symptoms* (Kinnunen, Mäkikangas, Mauno, Siponen, & Nätti, 2011).

Although the previous studies relatively clearly suggest that PE is positively related to both context-free and work-specific well-being with different levels of pleasure and activation, only the studies by Berntson and Marklund (2007), De Cuyper, Mäkikangas et al. (2012), and De Cuyper, Raeder et al. (2012) have been longitudinal with a follow-up time of 12 to 19 months. The present study tests the relation between PE and well-being longitudinally across two years, thus being able to show lagged relations. Furthermore, covering four different constructs of well-being (psychological symptoms, vigor at work, job satisfaction, and job exhaustion) the present study offers a more complete picture of the relationship between PE and psychological well-being than earlier studies that have investigated only one or two concepts at the same time.

1.2.5 Change in PE: Trajectories

According to COR theory, PE as a personal resource should be amenable to changes over time (Hobfoll, 2001; Hobfoll et al., 2003). More specifically, COR theory assumes that gaining new resources induces other resources or strengthens the resources one already has. This process is called as a gain spiral. The inverse process is called as a loss spiral: losing a resource will accelerate further resource loss.

Some of the antecedents of PE have the potential to increase or decrease in varying patterns over time and can be seen as resources (see Hobfoll, 2001). As these resources change, also the level of PE may change accordingly. For example, a doctoral student conducting his or her PhD research may perceive his or her level of PE to have increased after the dissertation is published (higher education), or a researcher not getting funding for a study may lose his or her trust in oneself (lower self-efficacy) and thus feel that his or her employability is also reduced. However, studies investigating change in PE are scarce.

The first study on changes in PE was conducted by Berntson and his colleagues (2008). They investigated the rank-order stability of PE and concluded that PE tends to be relatively stable (rank-order stability coefficient .83) over a 1-year follow-up period. The rank-order stability is based on a *variable-centered* approach and it describes the stability in the whole data (or in pre-defined groups) at an average level. Therefore it does not take into account the heterogeneous nature of the change: among some employees PE may be

stable over time while among other employees the level of PE may decrease or increase over time.

In contrast, a *person-centered* approach allows to classify employees into latent (i.e., not pre-defined) trajectories that differ in both the level (e.g., low or high) of PE and the pattern of change (e.g., stable, decreasing or increasing) (Mroczek, Almeida, Spiro, & Pafford, 2006). Figure 2 illustrates different types of PE trajectories with hypothetical examples. Trajectories 1 and 2 both show *stable* levels of PE over time but they differ in the level of PE. Individuals in trajectory 1 report *high* levels of PE at each measurement point while individuals in trajectory 2 indicate *low* levels of PE. Trajectory 3, in contrast, shows *linearly increasing* levels of PE over time. Individuals in this trajectory report the same level of PE at Time 1 as individuals in trajectory 2 but at Time 3 their level of PE is already equal with the level in trajectory 1. Trajectory 4 shows *nonlinear* change: from Time 1 to Time 2 PE *increases* but from Time 2 to Time 3 *decreases* almost to the baseline level. In addition to these four trajectories presented in the figure, also other combinations of different levels of and changes of PE are possible (e.g., linearly decreasing PE).

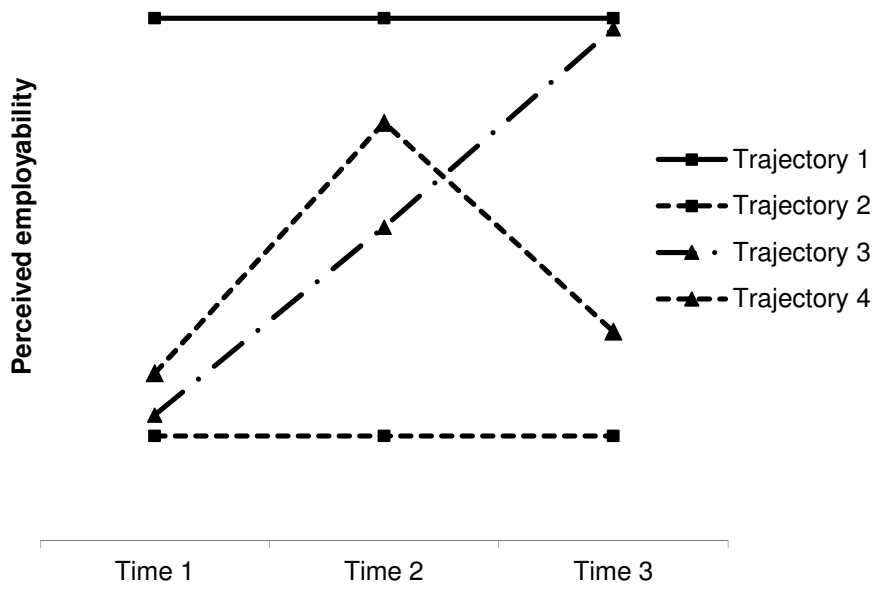

Figure 2 Hypothetical examples of different types of PE trajectories

The study by Mäkikangas, De Cuyper, Mauno, and Kinnunen (2013) is the first, and thus far the only one that used a person-centered method when examining change in PE. They identified four latent classes (i.e., trajectories) of PE with two-wave data. The classes were different in size, level and direction of change. Stability characterized the two largest classes: 49% of all employees reported relatively high and 46% relatively low PE across one year. Change in PE showed two linear patterns: decreasing (3%) and increasing (2%) levels of PE. Thus although PE tended to be relatively stable over one year, the results also revealed heterogeneity in the change in PE. Thus the study indicated that a more accurate understanding of change processes could be reached with a person-centered approach.

However, with more than two measurement points it is possible to estimate the rate and shape of change even more accurately (Rogosa, Brandt, & Zimowski, 1982). In fact, Kelloway and Francis (2013) argue that a longitudinal study, which aims to investigate change, should have at least three measurement points so that linear and nonlinear change (i.e., quadratic) can be captured. The more dynamic information that can be reached with adding a third measurement point is illustrated in Figure 2. Trajectories 3 and 4 show an almost similar linear increase in PE from Time 1 to Time 2. However, the reports at Time 3 reveal that among some individuals PE continues to increase (trajectory 3), while among others PE decreases (trajectory 4). Thus, in this example, the third wave revealed nonlinear change that was impossible to detect with two waves.

Why is it important to investigate and understand how PE, as a personal resource, changes? As the previous chapter showed, PE seems to be positively related to well-being in line with the expectations of COR theory. However, this evidence is not enough to show that PE has also other aspects of a personal resource. According to COR theory, an important feature of a personal resource is that the change in personal resource (a decrease or an increase) is echoed in well-being (a decrease or an increase, respectively) (Hobfoll et al., 2003). As an example, Hobfoll and his colleagues (2003) showed that a resource gain was associated with decreased levels of emotional distress. Thus, further studies are needed to examine how PE changes and how these changes are reflected in well-being. In order to cover these gaps in the literature of PE, the present study continues the work by Mäkikangas et al. (2013) by extending the research period with one year among the same university employees (i.e., three-wave data) and investigating the relationship between PE trajectories and well-being.

1.3 Perceived job insecurity in the context of PE

The interest in PE has risen along with increased feelings of insecurity among employees have been reported (Sverke & Hellgren, 2002). This increase in job insecurity is due to organizational strategies to reduce labor costs and to improve competitiveness by restructuring, layoffs, and "right sizing". The aim of this chapter is to, first, clarify the concept of perceived job insecurity and relationship with well-being and, second, understand the relation between PE and perceived job insecurity.

1.3.1 Perceived job insecurity: definition and consequences

In this study, perceived job insecurity refers to individuals' subjective perception of the likelihood or worry of involuntarily losing their present job (De Witte, 2000; De Witte & Näswall, 2003; Vander Elst, De Witte, & De Cuyper, 2013). Three features of this definition are important.

First, the definition focuses on *perceptions* and, thus, implies that even individuals in the same objective situation may nevertheless differ in the level of job insecurity (Greenhalgh & Rosenblatt, 1984). Second, the *likelihood and worry* of job loss refers to the cognitive and affective interpretation of job insecurity respectively (e.g., Borg & Elizur, 1992; Vander Elst et al., 2013). It has been argued that both aspects are needed (see Probst, 2008). Third, the word *involuntary* implicitly states that the job loss is undesired, and thus a threat (Sverke, Hellgren, & Näswall, 2002).

This definition is different from other definitions in the field as it is unidimentional as opposed to multidimensional definitions that have been discussed in the literature. A key debate concerns the distinction between quantitative and qualitative job insecurity (Hellgren, Sverke, & Isaksson, 1999), introduced by Greenhalgh and Rosenblatt (1984). Quantitative job insecurity refers to likelihood and worries about losing the job itself (discussed above), while qualitative perceived job insecurity means worries about losing important job features (e.g., decreasing salary and amount of work). Although qualitative perceived job insecurity has received some research attention (e.g., Ashford, Lee, & Bobko, 1989; Kinnunen, Mauno, Nätti, & Happonen, 1999; Vander Elst, 2013), most of the studies have focused on quantitative perceived job insecurity (Sverke et al., 2002). Also in this study the focus is on quantitative perceived job insecurity because it has a better match with the definition of PE used in this study. Both concepts concern the overall perception of the job, even if in different perspectives: perceived job insecurity is related to the current situation on the internal labour market and PE to the future situation on the external labour market (De Cuyper, Bernhard-Oettel et al., 2008).

Perceived job insecurity is identified as an important work stressor and thus a likely cause for impaired well-being (Ashford et al., 1989; Barling & Kelloway, 1996; Mauno, Leskinen, & Kinnunen, 2001). The review by Sverke and his colleagues (2002) and the meta-analysis by Cheng and Chan (2008) have shown that perceived job insecurity, indeed, is associated with negative consequences for well-being. More specifically, these authors concluded that perceived job insecurity has a large negative effect on job satisfaction, a medium negative effect on mental health, and a small to medium negative effect on physical health.

Several theories have been used to explain the negative well-being consequences of perceived job insecurity (see Probst, 2008; Sverke et al., 2002; Vander Elst, 2013). In other words, with these theories researchers have tried to find factors that mediate the negative consequences of perceived job insecurity for well-being. Of these theories, the three most well-known will be briefly discussed next (De Witte, 2005).

First, Jahoda's (1982) latent deprivation model states that employment is a way to satisfy different needs, such as acquiring an income and social contacts outside the family, the structuring of time, and being able to develop individually and socially. Unemployment thus would mean losing not only one's job, but also the possibility to fill these needs. Consequently, losing a job would be a stressful event in many respects. Although perceived job insecurity concerns *the threat* of unemployment, stress researchers suggest that anticipation of a stressful event invokes at least an equal amount of strain than the actual event, and is thus likely to induce the same anticipated deprivation of needs than the actual job loss (Lazarus & Folkman, 1984). However, to date, empirical studies on the path from perceived job insecurity to well-being via anticipated deprivation of needs are lacking (see Vander Elst, 2013).

Second, perceived job insecurity is likely to invoke feelings of unpredictability and uncontrollability for a prolonged time, which, in turn, are associated with experiences of stress and discomfort (Sverke et al., 2002; Vander Elst, 2013). Compared to actual job loss, when job loss is only expected to happen, the individual is unsure whether he or she should start actively secure the situation (e.g., start looking for a new job). This is likely to lead decreased felt control, which, in turn, will eventually lead to heightened anxiety and impaired well-being (Ashford, 1988; Lazarus & Folkman, 1984). The mediation trough perceived control has been empirically established in relation to psychological strain (Bordia, Hunt, Paulsen, Tourish, & DiFonzo, 2004; Bordia, Hobman, Jones, Gallois, & Callan, 2004), emotional exhaustion and job satisfaction (Paulsen et al., 2005), and vigor (Vander Elst, 2013).

Third, psychological contract theory explains the negative consequences of perceived job insecurity in terms of the psychological contract breach (De Cuyper & De Witte, 2005, 2006; Robinson & Morrison, 2000; Sverke et al., 2002). In other words, when the employee experiences job insecurity and job security has been part of the employee's psychological contract (i.e., the employee's implicit perception of the mutual expectations between him/her and the employer), she or he feels that the psychological contract is not fulfilled by the employer and this breach is known to lead to negative attitudinal and behavioral consequences (for a meta-analysis see Zhao, Wayne, Glibkowski, & Bravo, 1997). Moreover, Vander Elst (2013) concluded that psychological contract breach mediated also the relationship between perceived job insecurity and well-being, namely work-related and general strain. Psychological contract theory provides a central framework in this current study when the role of contract type in the relationship of PE, perceived job insecurity, and well-being is modeled. Thus psychological contract theory is explained in detail in chapter 1.4.1.

1.3.2 The relationship between PE and perceived job insecurity

The relation between PE and perceived job insecurity can be viewed within the Job Demands-Resources (JD-R) model (Bakker & Demerouti, 2007). In this model, job demands are any aspects of the job that calls for prolonged effort or skills from the employee and are thus related to physiological and/or psychological costs. Job resources, in contrast, are aspects of the job that are beneficial for the employee in achieving work or personal goals of growth, learning, and development. According to this model, job resources are seen as factors that are able to *reduce* job demands. Furthermore, job resources may help to *buffer* against the costs associated with job demands. Although the original JD-R model did not include personal resources, like PE, they have been integrated into the model more recently (e.g., Xanthopoulou, Bakker, Demerouti, & Schaufeli, 2007).

Translated to this current context, this means that, first, PE (a personal resource) reduces the experience of perceived job insecurity (a demand) (Van den Broeck, Van Ruysseveldt, Vanbelle, & De Witte, 2013; De Cuyper, Baillien, & De Witte, 2009; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009). In other words, PE and perceived job insecurity are supposed to be negatively related. Five cross-sectional studies have demonstrated this negative correlation, thus supporting the assumption of the JD-R model (Berntson, Näswall, & Sverke, 2010; De Cuyper, Baillien et al., 2009; De Cuyper, Bernhard-Oettel et al., 2008; De Cuyper, Notelaers et al., 2009; De Cuyper et al., 2010). In addition, Mäkikangas et al. (2013) showed with a person-centered approach that individuals who belonged to the classes of stable relative low or unstable decreasing PE reported higher levels of perceived job insecurity. De Cuyper et al. (2012), in turn, concluded that PE and perceived job insecurity had a cross-lagged effect on each other with a one-year time lag. However, also contradictory results have been reported: one cross-sectional study found a non-significant correlation (Kalyal, Berntson, Baraldi, Näswall, & Sverke, 2010) and one cross-sectional study a positive correlation (Silla et al., 2009). As a conclusion, it seems that mostly PE and job insecurity are negatively related. However, this study aims to further examine this relationship both longitudinally and in different contexts.

Secondly, the extended JD-R model suggests that PE may buffer against the negative effects of perceived job insecurity (i.e., an interaction effect) and thus be functional in reducing the costs related to perceived job insecurity. In other words, the negative relationship between perceived job insecurity and well-being is assumed to be weaker if PE

is high instead of low. The idea is that employees with a high belief in their opportunities to get a new employment are not affected by the worries of losing the current job as much as those who do not believe in their opportunities in the labor market. Consequently, employees with high PE in contrast to low PE report better well-being despite high perceived job insecurity.

The buffer effect has been studied less often. In fact, there exists only one study and it investigated the buffer effect in relation to context-free well-being, namely psychological distress and life satisfaction (Silla et al., 2009). The authors concluded that individuals with high PE reported better life satisfaction when facing job insecurity. No such an effect was found for psychological distress. One explanation may be that PE acts as a buffer only when positive well-being is considered. Thus high PE may prevent perceived job insecurity from decreasing positive well-being but not helping when perceived job insecurity is intensifying negative symptoms. Clearly, the buffer effect of PE needs further studies and this study aims to respond to this need.

1.4 The moderator role of contract type

When discussing about the antecedents of PE, contract type was presented as a possible situational factor contributing directly to PE or in interaction with other antecedents. Moreover, the previous chapters highlighted the role of perceived job insecurity in the PE debate. As a next step, contract type is accounted also in the relationship between PE/perceived job insecurity and well-being (see De Cuyper & De Witte, 2008; De Witte & Näswall, 2003). The arguments come from psychological contract theory, which will be explained next.

1.4.1 Psychological contract theory

The psychological contract refers to employees' perceptions of reciprocal obligations and entitlements implied in the employment relationship (Rousseau, 1989, 1995). In other words, employees hold beliefs of what they are supposed to do for the employer and what the employer is obliged to provide to them. Permanent and temporary employees are assumed to differ in the *content* of their psychological contracts (McLean Parks, Kidder, & Gallagher, 1998; Millward & Hopkins, 1998; Rousseau, 1995).

The content of the psychological contract has often been viewed as transactional or relational (Millward & Hopkins, 1998; Robinson, Kraatz, & Rousseau, 1994; Rousseau, 1995). The transactional psychological contract refers to an employee's clearly defined obligations during a short period of time and an employer's monetary compensation. The relational psychological contract, in turn, includes socio-emotional exchange between the employee and the employer. The employee offers loyalty and is willing to do more than is required while the employer offers security and takes care of employees' career development on long-term basis.

After the recent changes in the working life and increased job insecurity, the new psychological contract has been introduced next to the transactional and relational psychological contracts (e.g., Anderson & Schalk, 1998; De Cuyper & De Witte, 2007a). In the new psychological contract, employees provide the organization with their competence and effort, and they get developmental opportunities, flexibility, and ultimately employability in return. Said this, the new psychological contract sets the employee to be

responsible of one's career. Moreover, this contract—like the transactional psychological contract—is based on short-term exchange and the contract can be easily ended.

These different psychological contracts should not be considered as mutually exclusive but instead as layered (Isaksson, De Cuyper, Bernhard-Oettel, & De Witte, 2010). This means that transactional features are included in all psychological contracts and features of the relational and new psychological contracts build on these. Already Rousseau (1995) stated that psychological contracts, which are first transactional, might get also relational aspects as the employment relationship evolves. In fact, based on the length of the employment, it is hypothesized that temporary employees' psychological contracts are more transactional with characteristics of the new deal while permanent employees' psychological contracts, in contrast, are more relational as their employment is usually longer (De Cuyper & De Witte, 2007a, 2008; McLean Parks et al., 1998; Millward & Hopkins, 1998). Moreover, empirical evidence suggests that when the employment contract of a temporary employee continues, it is likely that his or her psychological contract contains more relational characteristics (Lee & Faller, 2005). In this respect, it has been showed that permanent and temporary employees' psychological contracts did not differ in transactional obligations (De Cuyper & De Witte, 2006, 2007a, 2007b). Instead, permanent employees had more relational (2006, 2007a, 2007b) and temporary employees more new (2007a) obligations, thus supporting theoretical assumptions.

Although the content of the psychological contract is assumed to be different among temporary and permanent employees, De Cuyper and De Witte (2008) argue that transactional psychological contracts per se are not less favorable in terms of outcomes than relational psychological contracts. Instead, psychological contract *breach* is likely to predict the different responses of permanent and temporary employees (Conway & Briner, 2002; Coyle-Shapiro & Kessler, 2002; De Cuyper & De Witte, 2008; Johnson & O'Leary-Kelly, 2003; Morrison & Robinson, 1997). Breach concerns "the cognition that one's organization has failed to meet one or more obligations with one's psychological contract in a manner commensurate with one's contributions" (Morrison & Robinson, 1997, p. 230). The meta-analysis by Zhao and his colleagues (1997) showed that psychological contract breach is related to decreased levels of job satisfaction, organizational commitment, organizational citizenship behavior, and in-role performance and increased levels of turnover intentions. Additionally, Vander Elst (2013) reported that psychological contract breach is related to negative well-being outcomes.

To summarize, permanent and temporary employees are assumed to have different psychological contracts, that is, they have different standards for evaluating contract breach. Thus their responses to the same situation may also be different. This reasoning has led to two breach hypotheses concerning the relationship between 1) perceived job insecurity and well-being, and 2) PE and well-being (De Cuyper & De Witte, 2008).

1.4.2 Breach hypotheses

Regarding perceived job insecurity, the breach hypothesis states that perceived job insecurity is more detrimental for permanent than for temporary employees (De Cuyper & De Witte, 2008; De Witte & Näswall, 2003). The reason behind this hypothesis is that permanent employees expect to get job security as an exchange to the loyalty they offer to the employer as a part of their relational psychological contract. Thus high job insecurity perceptions are viewed as a breach to this contract, which leads to harmful effects (i.e., impaired well-being). Temporary employees, in turn, accept job insecurity as a part of their

employment contract and it does not have an effect on their well-being. The moderator effect of contract type is illustrated in Figure 3 with a hypothetical example.

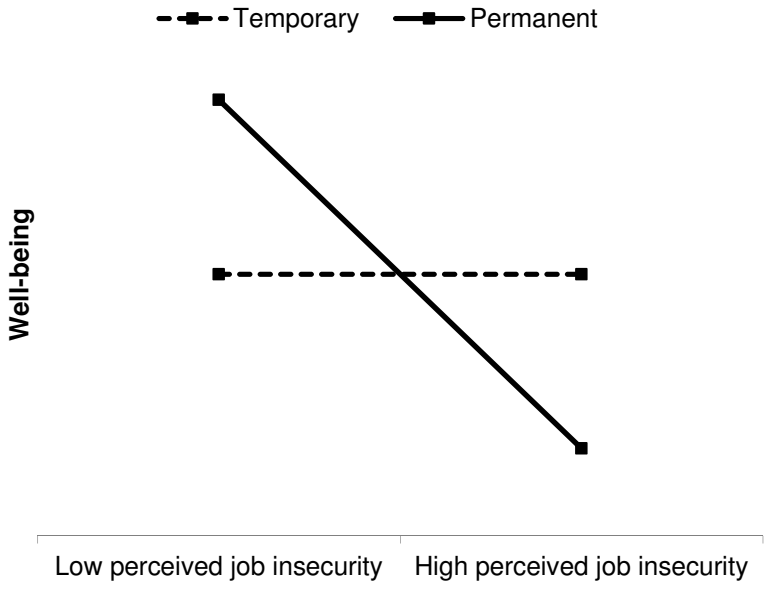

Figure 3 A hypothetical example of the moderator effect of contract type on the relationship between perceived job insecurity and well-being based on the breach hypothesis

This hypothesis has received cross-sectional empirical evidence regarding several outcomes: context-free well-being, more specifically, self-rated health status (De Cuyper et al., 2010) and psychological distress (Virtanen, Vahtera, Kivimäki, Pentti, & Ferrie, 2002), and work-related well-being, more specifically, work engagement and job exhaustion (Mauno, Kinnunen, Mäkikangas, & Nätti, 2005) and job satisfaction (De Cuyper, Notelaers et al., 2009; De Cuyper, De Witte et al., 2010; De Cuyper & De Witte, 2006; De Witte & Näswall, 2003; Mauno et al., 2005). The next step, which is taken in the present study, is to investigate this breach hypothesis longitudinally.

Regarding PE, the breach hypothesis states that PE is more important for temporary than permanent employees (De Cuyper & De Witte, 2008). It is assumed that PE is a crucial content in temporary employees' psychological contracts. More specifically, temporary employees expect that although they invest their time and knowledge on an insecure temporary basis, the employer will provide opportunities for employability enhancement, such as possibilities for learning and network building (Berntson, 2008; Forrier et al., 2009), which is needed when searching for a new job after the current contract expires. Thus low PE will be interpreted as a breach of the psychological contract, which will lead to negative outcomes (i.e., impaired well-being). On the other hand, high PE will also be interpreted as a fulfilment of the psychological contract, which, in turn, is positively associated with well-being (Parzefall & Hakanen, 2010). Permanent employees, instead, may not be as actively as temporary employees focused on searching a new job and thus PE is not part of their relational psychological contract. As a consequence, they do not evaluate the level of PE in the light of breach or fulfilment of the psychological contract. The moderator effect of contract type is illustrated in Figure 4 with a hypothetical example.

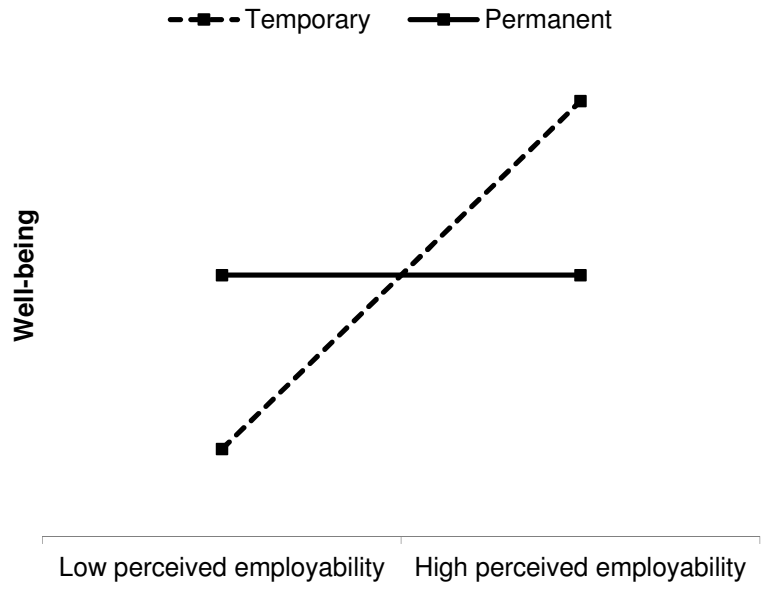

Figure 4 A hypothetical example of the moderator effect of contract type on the relationship between perceived employability and well-being based on the breach hypothesis

Empirical research on this hypothesis is scarce. De Cuyper with her colleagues (2010) has investigated cross-sectionally the relations between PE, contract type, and well-being. They concluded that PE was positively related to job satisfaction and self-rated health status among all employees and not just among temporary employees contrary to the breach hypothesis. More research is needed, thus this study continues investigating this phenomenon.

1.5 Aims and hypotheses

This dissertation consists of three original publications that aim to investigate PE as a personal resource within COR theory (Hobfoll, 1989, 1998, 2001). Each of these sub-studies provides new insights on different aspects of PE. Figure 5 (p. 29) illustrates the overall model of this study with the original publications.

Study I examined a set of antecedents of PE from the interactionist perspective (Ekehammar, 1974; Lazarus & Folkman, 1984). The antecedents (contract type, perceived mobility, optimism) were considered to form a continuum from individual to situational factors and both main and interaction effect were investigated as the effects of interactions have been thus far ignored in empirical studies despite the theoretical speculations. Consequently, the research questions were as follows:

(1) Do optimism, perceived mobility, and contract type relate directly to PE?
(2) Do the interactions between optimism, perceived mobility, and contract type explain additional variation of PE?

Study I was built on both a cross-sectional and a longitudinal design among highly educated Finnish employees, which enabled to study both concurrent and lagged relations. Based on earlier research and theory, the following hypotheses were set.

Hypothesis 1. Perceived mobility at Time 1 is positively related to PE at Time 1 (H1a) and Time 2 (H1b).

Hypothesis 2. Optimism at Time 1 is positively related to PE at Time 1 (H2a) and Time 2 (H2b).

Hypothesis 3. The association between perceived mobility and PE is stronger among permanent than among temporary employees (interaction Perceived mobility × Contract type) at Time 1 (H3a) and Time 2 (H3b).

Hypothesis 4. The association between optimism and PE is stronger among temporary than among permanent employees (interaction Optimism × Contract type) at Time 1 (H4a) and Time 2 (H4b).

Hypothesis 5. Optimism is more strongly related to PE when perceived mobility is low (interaction Perceived mobility × Optimism) at Time 1 (H5a) and Time 2 (H5b).

Hypothesis 6. Interaction of perceived mobility and optimism is stronger among permanent than among temporary employees (interaction Perceived mobility × Optimism × Contract type) at Time 1 (H6a) and Time 2 (H6b).

Study II shed light on the level of and change in PE and well-being at work; an issue that has not been addressed before. According to COR theory (Hobfoll et al., 2003), personal resources are amenable to changes and these changes are likely to be related to similar changes in well-being. Furthermore, COR theory assumes that also the overall level of a resource is positively related to well-being. Thus, the aims were as follows:

(3) *Is heterogeneous change in PE evident?*
(4) *How does the overall level of PE relate to vigor at work, job satisfaction, and job exhaustion over time?*
(5) *Does an increase or a decrease in PE relate to similar changes in vigor at work, job satisfaction, and job exhaustion?*

It was assumed that change in PE is heterogeneous in nature (Mroczek et al., 2006). In other words, it was likely that there exist sub-groups of employees who show different patterns of change in PE over time. As a consequence, a person-centered approach (i.e., Growth Mixture Modeling) was chosen in order to tap this heterogeneity. The resulting patterns of PE over time were labeled as PE trajectories. As three-wave data with one-year time lags were used, possible nonlinear changes were studied for the first time in the PE literature. Based on earlier research and theory, the following hypotheses were set.

Hypothesis 7. Three PE trajectories with a different change pattern are identified: (1) a trajectory with a stable level of PE over time (i.e., no change), (2) a trajectory with a decreasing level of PE, and (3) a trajectory with an increasing level of PE. Additionally, it is expected that some PE trajectories can have the same change pattern but differ only in the level of PE.

Hypothesis 8. Over time, PE trajectories with higher levels of PE are associated with higher vigor at work, higher job satisfaction, and lower job exhaustion.

Hypothesis 9. Changes in the level of PE among specific trajectories are associated with similar changes (i.e., a decrease or an increase) in vigor at work, job satisfaction, and job exhaustion.

Study III continued to investigate the positive relationship between PE and well-being as proposed by COR theory (Hobfoll, 2001). In this study, well-being referred to context-free well-being. Furthermore, the JD-R model (Bakker & Demerouti, 2007) supports the idea that PE may reduce or buffer against perceived job insecurity, thus also their relation was investigated. Additionally, psychological contract theory suggests (Rousseau, 1995) that the responses of permanent and temporary employees may differ. Thus, also contract type was taken into account as a potential moderator. The research questions were the following:

(6) Is PE negatively and perceived job insecurity positively related to psychological symptoms?
(7) Does PE reduce or buffer against the negative effects of perceived job insecurity?
(8) Does contract type moderate the relationships between PE/perceived job insecurity and psychological symptoms?

The same questions were examined in a longitudinal university sample and in a cross-sectional, representative sample of Finnish workforce. These two data sets complemented each other: for example, problem of common method bias was reduced with the longitudinal data, while the cross-sectional data allowed wider generalizations. Based on earlier research and theory, the following hypotheses were set.

Hypothesis 10. The positive relationship between perceived job insecurity and psychological symptoms is stronger in permanent than in temporary employees (interaction Perceived job insecurity × Contract type).

Hypothesis 11. The negative relationship between PE and psychological symptoms is stronger in temporary than in permanent workers (interaction PE × Contract type).

Hypothesis 12. The positive relationship between perceived job insecurity and psychological symptoms is stronger among those with low perceived employability compared with those high in employability (interaction Perceived job insecurity × PE).

Hypothesis 13. Temporary employees who perceive high job insecurity and low employability show the highest psychological symptoms (interaction Perceived job insecurity × PE × Contract type).

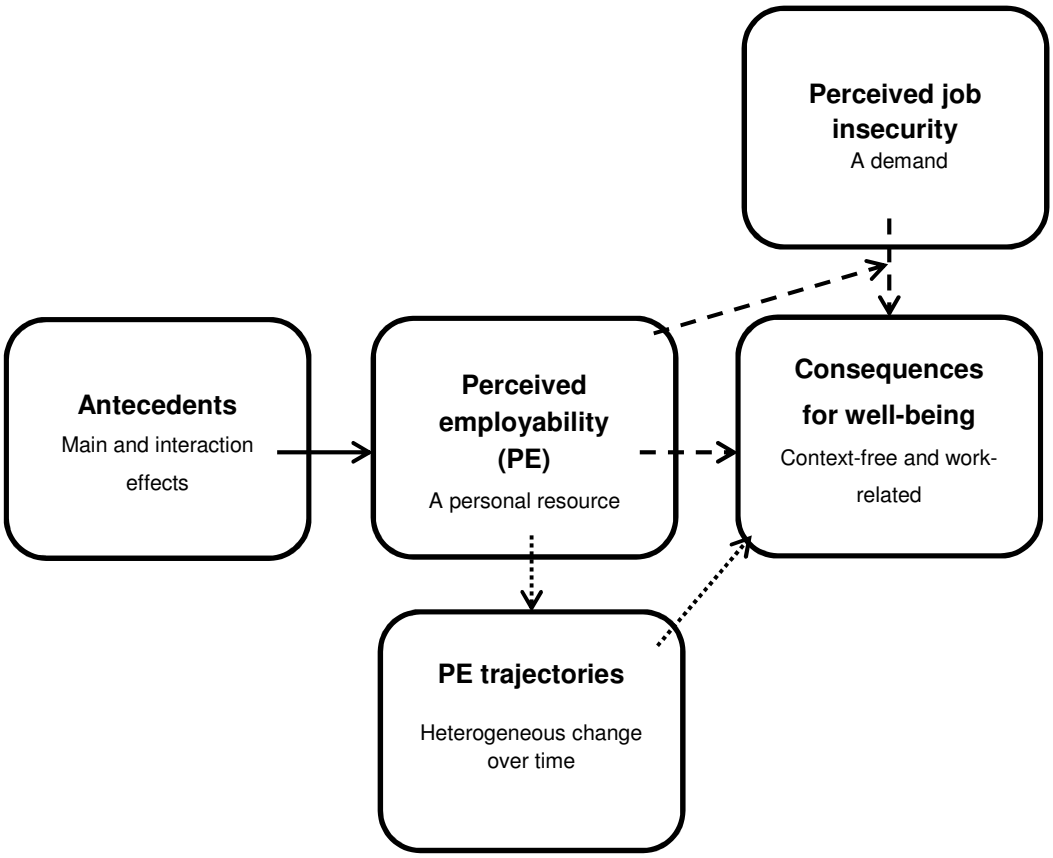

Figure 5 The general framework of the study; ⟶ Study I, ⋯▸ Study II, – – ▸ Study III

2. METHODS

2.1 Participants and procedure

This study was based on two data sets. In Studies I-III, the data were obtained as part of a larger research project entitled "Are temporary workers a disadvantaged group?" (see De Cuyper, Mäkikangas et al., 2012; Mäkikangas et al., 2013). Employees from two multi-disciplinary Finnish universities filled out electronic questionnaires (sent to work e-mail) in autumn 2008 (Time 1), 2009 (Time 2) and 2010 (Time 3). In the first phase, all employees working at least 20 hours per week were invited (N = 4,508) of which 2,137 participated (response rate 47.4%). At Time 2, an invitation was sent to those who participated at Time 1 and were still working at the same university (N = 2,020). This time the questionnaire was completed by 1,314 employees (response rate 65.0%). At Time 3, the same procedure was repeated resulting in 926 responses to 1,225 invitations (response rate 75.6%). Thus 20.5% of the original sample continued in the study for two years. The cross-sectional data from Time 1 were used in Study I. The two-wave data from Time 1 and Time 2 were used in Studies I and III. The three-wave data from Time 1 to Time 3 were used in Study II.

It should be noted that during the data collection years the Finnish university system underwent major changes due to the new law [the Universities Act (558/2009)]. The greatest changes occurred at two levels: 1) the ownership of the universities changed from predominantly state-owned to predominantly privately owned organizations and 2) the employees' status as civil servants changed, which also changed to the legislation concerning the benefits and protection against dismissal. Given the magnitude of the changes, it is likely that they also increased demands and created uncertainty among university employees, which, in turn, calls for personal flexibility in the form of employability (Van der Heijde & Van der Heijden, 2006). Consequently, the data offered a fruitful empirical ground for this study.

In Study III, also the data of the Quality of Work Life Survey (QWLS) from Statistics Finland (see Lehto & Sutela, 2008) were used. This cross-sectional data set is representative of the Finnish working population in March–May 2008. Altogether 6,499 employees working at least 10 hours a week were contacted for a face-to-face interview. Interviews were conducted most often at home but also at work, at the library or at the cafeteria and the average length was 66 minutes. Altogether 4,392 employees participated resulting in a response rate of 67.6%.

Table 1 presents the background characteristics of the participants in different studies without listwise deletions. Employees at the universities, on average, had higher education, had more often a temporary contract and worked more often over 40 hours per week than participants in QWLS survey.

Table 1 Characteristics of the samples

	Data set 1 (Universities)						Data set 2 (QWLS)	
	Cross-sectional (Study I) (*N* = 2,137)		Two-wave longitudinal (Studies I, III) (*N* = 1,314)		Three-wave longitudinal (Study II) (*N* = 926)		Cross-sectional, (Study III) (*N* = 4,392)	
	n	%	*n*	%	*n*	%	*n*	%
Gender								
Female	1,405	65.7	889	67.7	617	66.6	2,381	54.2
Male	732	34.3	425	32.3	309	33.4	2,011	45.8
Age								
Under 35 years	634	30.0	355	27.4	232	25.1	1,291	29.4
35–49	815	38.6	528	40.7	372	40.2	1,668	38.0
Over 49 years	663	31.4	413	31.9	307	33.2	1,433	32.6
Education[1)]								
Low	531	24.8	325	24.7	221	23.9	3,327	75.8
High	1,606	75.2	989	75.3	705	76.1	1,065	24.2
Having a partner								
No	419	19.6	256	19.5	185	20.0	1,178	26.8
Yes	1,718	80.4	1,058	80.5	741	80.0	3,214	73.2
University								
A	1,197	56.0	670	51.0	500	54.0	–	–
B	940	44.0	644	49.0	426	46.0	–	–
Contract type								
Permanent	912	42.7	605	46.0	457	49.4	3,858	87.8
Temporary	1,225	57.3	709	54.0	469	50.6	533	12.1
Working hours								
40 or less	1,381	65.1	845	64.3	596	64.8	3,952	90.0
Over 40	741	34.9	460	35.0	324	35.2	418	9.6
Managerial tasks								
No	1,579	73.9	947	72.1	651	70.3	2,606	59.3
Yes	558	26.1	367	27.9	275	29.7	1,786	40.7
Personnel group[2)]								
Academic	1,402	65.6	852	64.8	598	64.6	1,271	29.1
Other	735	34.4	462	35.2	328	35.4	3,099	70.9

Note. 1) Education: low = education under university level, high = education at university level;
2) Personnel group: academic = teachers and researchers at the university (universities) / white-collar employees (QWLS), other = employees in administrative tasks at the university (universities) / blue-collar employees (QWLS)

2.2 Sample attrition

The first university data set from 2008 (Time 1) was representative of the university employees in terms of age and occupational group. However, women and temporary employees were over-represented. The over-representation of temporary employees was expected because this research project was targeted towards temporary work. Sample attrition for the longitudinal data was analyzed in three ways: between Time 1 and Time 2 ($n_{\text{non-respondents}}$ = 823, $n_{\text{respondents}}$ = 1,314), between Time 2 and Time 3 ($n_{\text{non-respondents}}$ = 388, $n_{\text{respondents}}$ = 926) and between Time 1 and Time 3 ($n_{\text{non-respondents}}$ = 1,211, $n_{\text{respondents}}$ = 926). The non-respondents and respondents did not differ in education, having a partner,

occupational group or working hours. However, they differed in gender, age, the university they worked at, contract type and having managerial tasks. More specifically, respondents at Time 2 were more often female (62.7% vs. 67.7%, $p = .019$), older (mean age 42.1 vs. 43.3, $p = .016$), worked more often at University B (36.0% vs. 49.0%, $p < .001$), had more often a permanent employment contract (37.3% vs. 46.0%, $p < .001$) and had more often managerial tasks (23.2% vs. 27.9%, $p = .016$) than the non-respondents.

Moreover, respondents at Time 3 were older (mean age 42.1 vs. 43.8, $p = .007$), worked more often at University A (43.8% vs. 54.0%, $p = .001$), had more often a permanent contract (38.1% vs. 49.4%, $p < .001$) and managerial tasks (23.7% vs. 29.7%, $p = .027$) than those who participated only at Time 1 and Time 2. When comparing the respondents at Time 3 to those who participated only at Time 1, differences were found in age (mean age 42.1 vs. 43.8, $p < .001$), in the share of permanent contracts (37.6% vs. 49.4%, $p < .001$) and managerial tasks (23.4% vs. 29.7%, $p = .001$).

Differences in participation rates between the two universities are related to the problems with the updating of the e-mail system at University A in autumn 2009 (Time 2). The reason for differences between participants in the type of employment contract is the fact that short fixed-term contracts expired before Time 2 and Time 3 data collections. Additionally, the larger drop-out of temporary employees introduced also differences in age and having managerial tasks because permanent employees were older and had more often managerial tasks than temporary employees.

2.3 Measures

The original articles provide detailed information on the measures used in Studies I-III. Thus, the following represents only a brief summary. See Table 2 (p. 35) for the summary of the studies where, for example, the reliabilities (Cronbach alphas) of the sum variables are presented.

2.3.1 Perceived employability

In Studies I and III, PE was measured with four items adapted from two earlier studies: "Given my qualifications and experience, getting a new job would not be very hard at all", "I can think of a number of organizations that would probably offer me a job if I was looking", "My experience is in demand on the labour market", and "It would not be very difficult for me to get an equivalent job in a different organization". The first two items were taken from Griffeth et al. (2005) and the last two from Berntson and Marklund (2007). The responses were given on a scale from 1 (totally disagree) to 7 (totally agree). In Study II, PE was measured with the first three items.

In addition, in Study III, which included two sub-studies, also a one-item scale was used to measure PE, namely "What do you think what would be the likelihood of finding a new job for you?". Responses were given on a scale 1 (good), 2 (reasonable) and 3 (poor). Responses were recoded so that "poor" indicates low PE and "reasonable to good" indicates high PE.

2.3.2 Antecedents of perceived employability

In Study I, *perceived mobility* was assessed using two items from a larger scale developed by Griffeth et al. (2005): "I am able to move to another place of residence now if a better job comes" and "There are factors in my personal life (e.g., school age children, relatives etc.), which make it very difficult for me to move in the near future" (reversed). The response scale ranged from 1 (totally disagree) to 7 (totally agree).

In Study I, *optimism* was measured with three items based on the Life Orientation Test-Revised (LOT-R; Scheier, Carver, & Bridges, 1994): "In uncertain times, I usually expect the best", "I'm always optimistic about my future", "Overall, I expect more good things to happen to me than bad". Respondents noted their degree of agreement on a scale ranging from 1 (totally disagree) to 7 (totally agree). The original measure includes six items but three items with positive wording were chosen because factor analyses have showed that these three items reflect optimism, whereas three negatively worded items indicate pessimism (Kubzansky, Kubzansky, Maselko, 2004; Marshall, Wortman, Kusulas, Hervig, & Vickers, 1992; Robinson-Whelen, Kim, MacCallum, Kiecolt-Glaser, 1997).

In Studies I-III, respondents stated if their *employment contract* was permanent (i.e., without expire date) or temporary (i.e., with fixed expire date).

2.3.3 Consequences for well-being

In Study II, *vigor at work* was measured with three items ("At my work, I feel that I am bursting with energy", "At my job, I feel strong and vigorous", "When I get up in the morning, I feel like going to work") from the Utrecht Work Engagement Scale-Short Form (UWES-9; Schaufeli et al., 2006). The responses were given on a scale from 1 (never) to 7 (always). This scale has been validated in Finland by Seppälä et al. (2009).

In Study II, *job satisfaction* was measured with one question: "How satisfied are you with your job?". The responses were given on a scale from 1 (very dissatisfied) to 7 (very satisfied). A meta-analysis by Wanous, Reichers, and Hudy (1997) shows that single-item measures of job satisfaction are reliable and robust and thus acceptable.

In Study II, *job exhaustion* was measured with three items (e.g., "I feel emotionally drained from my job") from the 5-item job exhaustion scale from the Finnish version of the Maslach Burnout Inventory-General Survey (Kalimo, Hakanen, & Toppinen-Tanner, 2006; Maslach et al., 1996). The responses were given on a scale from 1 (never) to 7 (always). Those three items of the original five items, which referred to severe fatigue, were selected. All of the items had high factor loadings on the exhaustion scale in Finnish studies (Mäkikangas, Hätinen, Kinnunen, & Pekkonen, 2011; Schutte, Toppinen, Kalimo, & Schaufeli, 2002).

In Study III, to measure *psychological symptoms* respondents were asked to rate how often they had recently suffered from six symptoms (fatigue, apathy or lack of energy; difficulties in falling asleep or recurrent awakenings at night; depression; over-exhaustion; tenseness, nervousness, or irritability; feeling that it is "all just too much"; see Lehto & Sutela, 2008). Responses were given on a scale from 1 (never) to 6 (daily or almost daily).

2.3.4 Perceived job insecurity

In Study III, perceived job insecurity was measured with two different measures in the two sub-studies. One item was used to ask whether the respondents considered threat of dismissal as an insecurity factor in their work. Responses were either no (0) or yes (1), indicating either low perceived job insecurity or high perceived job insecurity respectively. These kinds of measures have been used earlier (Arnold & Feldman, 1982; Borg & Elizur, 1992; Davy, Kinicki, & Scheck, 1991; Mohr, 2000). The second scale included four items developed by De Witte (2000), such as "I fear I will lose my job" and "I think I might get fired in the near future". Responses were given on a scale from 1 (totally disagree) to 7 (totally agree). This scale has been validated by Vander Elst et al. (2013).

2.4 Data analyses

In Studies I and III, moderated multiple hierarchical regression analyses conducted with SPSS 19.0 for Windows statistical package were the primary methods of analysis as the major goals were to examine the main and interaction effects between the antecedents (contract type, perceived mobility, optimism) on PE. In Study II, second-order growth mixture modeling (SOGMM) was conducted with the Mplus statistical package (Version 5.2, Muthén & Muthén, 1998–2007). The aim was to identify subgroups of PE with different levels of and changes in PE across time. As SOGMM is based on structural equation modeling (SEM), the decision on the number of subgroups was assisted by several statistical criteria. This person-centered analysis was followed by multivariate analysis of variance (MANOVA) conducted with SPSS to find out whether the subgroups differed in well-being outcomes across time. A summary of the participants, research aims, variables, and main data analyses is presented in Table 2. The detailed description of the methods can be found from the original publications.

Table 2 Summary of the studies

	Data	Research aims	Variables	Main data analyses
Study I	Cross-sectional (*N* = 1,379) Two-wave longitudinal (*N* = 803)	To examine the main and interaction effects of contract type, perceived mobility, and optimism on PE	Contract type Perceived mobility (r = .73) Optimism (α = .75) Perceived employability (α = .87–.89)	Moderated multiple hierarchical regression analysis
Study II	Three-wave longitudinal (*N* = 926)	To identify latent PE trajectories with different levels and change in PE over time To test how the trajectories differ in well-being at work over time	Perceived employability (α = .84–.86) Vigor at work (α = .89–.91) Job satisfaction Job exhaustion (α = .89–.90)	Second-order growth mixture modeling (SOGMM); Multivariate analysis of variance (MANOVA)
Study III	Cross-sectional, QWLS (*N* = 4,330) Two-wave longitudinal (*N* = 1,212)	To examine the main and interaction effects of PE, perceived job insecurity, and contract type on psychological symptoms	Perceived employability (α = .85) Perceived job insecurity (α = .92) Contract type Psychological symptoms (α = .82–.88)	Moderated multiple hierarchical regression analysis

3. OVERVIEW OF THE RESULTS

3.1 Study I

The purpose was to study how three antecedents of PE along a situational-individual continuum, namely contract type, perceived mobility, and optimism, were related to PE. Additionally, the interactions between these variables were investigated in relation to PE. As expected, cross-sectional results showed that perceived mobility and optimism were positively related to PE. Also in line with the hypothesis, the association between perceived mobility and PE was stronger among permanent than among temporary employees. Contrary to the expectations, the positive relation between optimism and PE was independent of contract type and the level of perceived mobility. However, among permanent employees, optimism buffered against the negative effect of low perceived mobility: optimism was more strongly related to PE when the level of perceived mobility was low instead of high (three-way interaction) as hypothesized. Longitudinal analyses replicated these results with the exceptions that mobility had no effect on PE and that the three-way interaction was not significant.

3.2 Study II

The first aim was to identify PE trajectories in order to investigate the level and heterogeneous change in PE across time. The second aim was to examine how the trajectories relate to well-being at work over time. In line with the expectation, four trajectories with different levels of PE and nonlinear change in PE were identified. Two of the trajectories showed stable levels of PE from Time 1 to Time 3: one with relatively high PE (73.4% of the employees) and the other with relatively low PE (14.5%). One trajectory (7.0%) indicated first a decrease in PE from Time 1 to Time 2 and then an increase from Time 2 to Time 3. The last trajectory (5.1%) showed the opposite pattern, that is, first an increase in PE from Time 1 to Time 2 and then a decrease from Time 2 to Time 3. The analyses concerning well-being at work showed, as expected, that the trajectory with highest overall level of PE, compared to the trajectory with lowest levels of PE, reported also higher vigor at work, higher job satisfaction and lower job exhaustion. However, though the trajectories with changes in PE indicated an overall level of PE that was between the other two trajectories, they did not differ in well-being compared to the other trajectories. Moreover, the reports on well-being at work remained stable across time in all change trajectories with one exception: The employees in the trajectory, which showed first the decrease and then the increase in PE, reported higher vigor at work at Time 3 compared to the reports at Time 1. Thus, in this regard the assumptions were only partially supported.

3.3 Study III

The aim of this study was to investigate the main and interaction effects of PE, perceived job insecurity, and contract type on psychological symptoms. The results showed the same pattern in both the longitudinal university sample and the cross-sectional nationally representative sample. PE was negatively and perceived job insecurity positively related to psychological symptoms as assumed. Contrary to the expectations, the strength of the negative association between PE and psychological symptoms did not depend on contract type. However, in line with the hypothesis, the positive relationship between perceived job insecurity and psychological symptoms was stronger among permanent than temporary employees. PE and perceived job insecurity were negatively related, as expected, but PE did not buffer against high perceived job insecurity neither in the whole sample nor among temporary employees.

Table 3 summarizes the hypotheses and the results of all studies.

Table 3 Summary of hypotheses and hypotheses conclusion for all studies

Study		Hypothesis	Hypothesis conclusion
I	H1	Perceived mobility at Time 1 is positively related to PE at Time 1 (H1a) and Time 2 (H1b).	a supported b not supported
	H2	Optimism is at Time 1 is positively related to PE at Time 1 (H2a) and Time 2 (H2b).	a supported b supported
	H3	The association between perceived mobility and PE is stronger among permanent than among temporary employees (interaction Perceived mobility × contract type) at Time 1 (H3a) and Time 2 (H3b).	a supported b supported
	H4	The association between optimism and PE is stronger among temporary than among permanent employees (interaction Optimism × Contract type) at Time 1 (H4a) and Time 2 (H4b).	a not supported b not supported
	H5	Optimism is more strongly related to PE when perceived mobility is low (interaction Perceived mobility × Optimism) at Time 1 (H5a) and Time 2 (H5b).	a not supported b not supported
	H6	Interaction of perceived mobility and optimism is stronger among permanent than among temporary employees (interaction Perceived mobility × Optimism × Contract type) at Time 1 (H6a) and Time 2 (H6b).	a supported b not supported
II	H7	Three PE trajectories with a different change pattern are identified: (1) a trajectory with a stable level of PE over time (i.e., no change), (2) a trajectory with a decreasing level of PE, and (3) a trajectory with an increasing level of PE. Additionally, it is expected that some PE trajectories can have the same change pattern but differ only in the level of PE.	supported

	H8	Over time, PE trajectories with higher levels of PE are associated with higher vigor at work, higher job satisfaction, and lower job exhaustion.	supported
	H9	Changes in the level of PE among specific trajectories are associated with similar changes in vigor at work, job satisfaction, and job exhaustion.	partially supported
III	H10	The positive relationship between perceived job insecurity and psychological symptoms is stronger in permanent than in temporary employees (interaction Perceived job insecurity × Contract type).	supported
	H11	The negative relationship between PE and psychological symptoms is stronger in temporary than in permanent workers (interaction PE × Contract type).	not supported
	H12	The positive relationship between perceived job insecurity and psychological symptoms is stronger among those with low perceived employability compared with those high in employability (interaction Perceived job insecurity × PE).	not supported
	H13	Temporary employees who perceive high job insecurity and low employability show the highest psychological symptoms (interaction Perceived job insecurity × PE × Contract type).	not supported

4. DISCUSSION

4.1 Main findings concerning PE as a personal resource

This section places the main findings into the framework of COR theory (Hobfoll, 1989, 2001). This ties in with the main aim of the present dissertation, namely, to investigate PE as a personal resource. Thus, the structure of this section follows the logic of COR theory, starting with the relation between PE and well-being, continuing with change in PE, and closing with enhancement of PE.

4.1.1 PE and well-being

In line with the principles of COR theory, employees with high PE were assumed to have resilience to cope, adjust, and adapt to the changing circumstances in the current workplace and more widely in the labor market. In other words, employees with a strong belief in their possibilities to get a new job were expected to feel in control over their work situation and thus trusting their ability to successfully accomplish their goals in changing situations. Consequently, these employees were assumed to have lower strain levels and to report better well-being. The findings reflect four aspects in the expected relationship between PE and well-being.

First, the positive association between PE and well-being was evident concerning all different types of well-being indicators as categorized by Warr (2013). More specifically, PE was associated with both context-free and work-related well-being as well as both positively and negatively framed well-being and well-being reflecting low or high valence. Thus, PE seems to have a spillover effect (Danna & Griffin, 1999) from work-context to life in general. These results were in line with earlier studies (e.g., Berntson & Marklund, 2007; De Cuyper, Bernhard-Oettel et al., 2008; Kinnunen et al., 2011). Furthermore, these associations were found both cross-sectionally and longitudinally, which implies that PE has, like resources in general, a long-term impact (Hobfoll, 2002). However, the results also indicated that the level of PE needs to be rather high before the impact on well-being can be detected.

Second, an increase in PE was related to an increase in vigor at work. This finding corresponds with the assumption made in COR theory: resource losses and gains are the primary operating mechanisms affecting stress reactions and thus well-being (Hobfoll et al., 2003). However, overall, the relation between change in PE and change in well-being was rather weak as the effect was evident only for vigor at work but not for job satisfaction or job exhaustion. Thus, the conclusion is that PE has power to change well-being, at least across two years, but this power is limited. Instead, PE seems to maintain levels of well-being.

Third, although PE was negatively related to perceived job insecurity, it did not buffer against the negative consequences of perceived job insecurity for psychological symptoms, which can be considered as an indicator of context-free well-being with feelings of displeasure. This means that even though the current interest towards PE partly arose from the urge to find a resource against perceived job insecurity and lost control (Forrier & Sels,

2003b; Fugate et al., 2004), it seems that PE is not a resource targeted directly to negative well-being consequences vis-à-vis job insecurity. It might be that PE functions as a buffer only in regard to positively-framed well-being or to well-being indicators that are proximal instead of distal as the results of the study by Silla et al. (2009) suggest.

Fourth, PE did not relate more strongly to temporary employees' well-being (i.e., psychological symptoms) contrary to the assumption based on the breach hypothesis. A similar non-significant interaction has been reported by De Cuyper et al. (2010). Nevertheless, the breach hypothesis was supported concerning perceived job insecurity and psychological symptoms: the positive relation between perceived job insecurity and psychological symptoms was stronger among permanent than among temporary employees. This result was similar to results from several earlier studies (De Cuyper, Notelaers et al., 2009; De Cuyper et al., 2010; De Cuyper & De Witte, 2006; De Witte & Näswall, 2003; Mauno et al., 2005; Virtanen et al., 2002). As a conclusion, it might be that PE is a personal resource to all employees while perceived job insecurity is a demand that is particular to permanent employees on the current labor market (Sverke et al., 2002). An alternative explanation is that temporary employees have different psychological contracts as their volition to temporary employment is different. In fact, the study by Kinnunen et al. (2011) showed that PE seems to be a personal resource especially among those temporary employees who chose voluntarily temporary employment. It might be that their psychological contracts include characteristics of the new psychological contract while involuntarily temporary employed do not have this new attitude towards careers.

4.1.2 Change in PE

PE as a personal resource should be amenable to changes over time (Hobfoll, 1998). This changing nature of PE is supported by the antecedents of PE, many of which are likely to change over time (e.g., acquirement of new skills, changes in the national unemployment rate). Thus far only two studies have investigated change in PE over time, namely, the studies by Berntson et al. (2008) and Mäkikangas et al. (2013). These studies – the former using a variable-centered rank-order stability estimate and the latter a person-centered approach with latent classes – indicated that PE seems to be relatively stable over one year. This present study shed further light on change in PE by investigating PE over two years with three measurement points using a person-centered approach. Thus this study – as a longitudinal study with three measurement points (see Kelloway & Francis, 2013) – was able to take into account both the level of PE and the expected, possibly nonlinear, heterogeneous change in PE.

For the majority of the university employees (87.9%), PE was stable over time. This is in line with earlier studies (Berntson et al., 2008; Mäkikangas et al., 2013). However, despite this relatively high stability, change in PE was evident among 12.1% of the employees. These different patterns of stability and change supported the view that change in psychological constructs is often heterogeneous (Mroczek et al., 2006). With the selected analysis method (i.e., Growth Mixture Modeling), these patterns of stability and change could be elaborated with the information about the level of PE over time. This distinction was especially important in the light of COR theory: both the level and change in resources are supposed to be linked to well-being. Change in resources has generally received minor research interest, which may be partly due to lack of suitable analysis methods. Based on the findings of this study, SEM-based person-centered methods are highly recommendable in order to investigate both the level of the resource and change in the resource.

Due to lack of studies on change in resources, it is difficult to evaluate if the share of 12% of the employees with change in PE is typical or atypical. One plausible explanation for the relatively small share of change is that PE may be strongly based on relatively stable personality characteristics (e.g., optimism) or at least the measurement of PE used in this study refers to those factors that change in the long-term (e.g., experience, demands of the labor market).

Moreover, change in PE had a nonlinear shape to two opposite directions. The decrease and increase in PE from T1 and T2 in two trajectories replicated the findings by Mäkikangas et al. (2013). However, with an additional measurement point it was possible to see that change in PE between T2 and T3 approached the baseline level. It can be speculated that changes planned and initiated at universities at Time 1 enhanced employability perceptions among some employees who appraised these changes as challenges but impaired these perceptions among others who appraised these changes as threats at Time 2. At Time 3, employees may eventually have evaluated the organizational changes as rather small and not having direct consequences on them. Thus, after some of the changes were implemented and the employees perceived the effects of these changes, their level of PE approached the baseline level. Though this is a tentative explanation, it reflects the finding that, among some employees, PE is amenable to change in a dynamic way within a relatively short time.

4.1.3 Antecedents of PE

This study has so far shown that PE can be considered as a personal resource, which has at least a maintaining effect on well-being and which is amenable to changes over time. The next logical step is to think about how PE can be enhanced. This brings the antecedents of PE in to the fore.

In this study, the antecedents (contract type, perceived mobility, optimism) were thought to form a continuum from situational to individual factors in contrast to an earlier stricter categorization into purely situational or individual factors (see Berntson, 2008; Brown et al., 2003; Forrier et al., 2009; Hillage & Pollard, 1998; McQuaid & Lindsay, 2005; Wittekind, 2007). The main focus was on examining the interactions between the antecedents based on the assumptions of the interactionist view (Berntson, 2008; Ekehammar, 1974; Forrier et al., 2009; McQuaid & Lindsay, 2005). According to this view, it is likely that the same situation has a different effect on employees' perceptions (e.g., on PE) depending on the individual characteristics of the employees. Despite several theoretical discussions, this study was the first one to investigate interactions of antecedents.

The results supported the interactionist view, as perceived mobility was more important for permanent than temporary employees' PE (i.e., the interaction of perceived mobility and contract type). This finding can be interpreted to suggest that although situational factors (here contract type) cannot be affected directly, they are still important to be taken into account when enhancement of PE is strived for. The same enhancement program may not be equally effective for employees in different situations; in this case for temporary and permanent employees.

Furthermore, this study showed that PE is also related to personal dispositions as the positive association between PE and optimistic life orientation was evident both concurrently and over one year among permanent and temporary employees. In general, personal dispositions are seen to be more persistent to change than several other

antecedents that are suggested to determine PE (e.g., skills and knowledge). Nevertheless, although the basis for an optimistic life orientation is developed in childhood, it can be further developed in adulthood (Feldt et al., 2006). In all, this study supports the view that additionally to movement capital (Peeters et al., 2013) also personal dispositions add information on how to enhance PE.

4.2 Methodological evaluation of the study

This study, like every empirical research, has limitations that are important to take into account when interpreting the results. The most important of these are discussed next.

Generalizability of the results. This study was mainly based on the sample of Finnish university workers. This selection was originally made because this study was part of a larger research project on temporary employment. At Finnish universities over half of the staff works on a temporary contract, thus providing a sufficiently large number of participants having a temporary employment contract. However, this choice limits the generalization of the results. It is possible that the results obtained are generalizable only to highly educated Finnish white-collar workers. Moreover, the timing of the data collection (autumn 2008 – autumn 2010) coincides with the global economic crisis and the change process, which occurred in all Finnish universities. This raises the question concerning the extent to which these factors may have affected employees' perception of employability. On the other hand, the use of a rather homogenous sample may have meant that relationships between the phenomena were harder to find because of more limited variation. Furthermore, also a nationally representative sample of the Finnish workforce was used. These data were collected in spring 2008 before the recession. As the results from these two samples were similar, it suggests that study results could be, at least partly, generalized also to other contexts than Finnish universities. Nevertheless, more research with heterogeneous samples in different cultures is needed.

Use of self-reports. All variables used in this study were obtained through self-reports. It is possible that at least part of the shared variance of these variables is due to the self-report method and not to their real relationships at a conceptual level (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). However, Spector (2006) has argued that common method variance does not automatically inflate associations measured with self-report measures. Furthermore, the longitudinal study design and the different anchor points of the scales were used in order to reduce common method bias (Podsakoff et al., 2003). Moreover, concerning the interaction effects, common method variance is likely to attenuate rather than to inflate interactions (Evans, 1985). Besides, self-reports are at the core of PE and perceived job insecurity, and it is argued that individual well-being is best evaluated by the individuals themselves (Jylhä, 2009). Nevertheless, future studies could benefit from physiological measures of health as it has been shown in the framework of COR theory that resources have a positive effect also on physical well-being (Hobfoll, 2002).

Study designs and causal relations. Studies I and III were partly cross-sectional and thus the observed associations did not reveal the direction of the effect. However, the same studies were also partly longitudinal with two measurement points. Although causality was not studied (e.g., with cross-lagged analyses), the cross-sectional results were replicated even with a longitudinal, smaller sample suggesting that the associations between constructs are real and last over time. Moreover, Study II was longitudinal with three measurement points. Thus it allowed investigating nonlinear, concurrent associations, which was not possible in Studies I and III. In this study, the causal relationship between PE and well-

being was assumed to be from high PE to good well-being but the revised path from good well-being to high PE is also possible. In fact, a study by Vanhercke, Kirves et al. (2013) showed that the direction of the relationship between PE and well-being depended on the characteristics of the sample. They concluded that well-being predicted PE among the unemployed job seekers, whereas PE predicted well-being among the employed.

In addition to the causal relations, also time lag is important in all longitudinal designs. As well-being was one of the major concepts in this study and well-being belongs to long-term consequences (Sverke et al., 2002), the one-year time lag was considered sufficient to reveal meaningful variation in the variables. Nevertheless, the right time lag is very difficult to define theoretically as theories explicitly considering the role of time are lacking (see Kelloway & Francis, 2013).

Measures used. The majority of the measures used in this study were validated in earlier studies (perceived mobility, optimism, vigor at work, job exhaustion, and perceived job insecurity). However, also one-item measures (PE, contract type, job satisfaction, and perceived job insecurity) were used. Although validated scales are preferable, one-item measures have been used successfully, meaning that associations between variables have been found despite restricted variance captured by the measure (e.g., Abdel-Khalek, 2006; Arnold & Feldman, 1982; Borg & Elizur, 1992; Davy et al., 1991; De Cuyper et al., 2010; Mohr, 2000).

At the time when the study started a validated measure for PE was not in a general use. Therefore, in this study, a combined scale of earlier scales for measuring PE was selected. The items selected have shown discriminant validity in earlier studies and they reflect important factors in perceiving employability (i.e., skills, experience, and knowledge of the current labor market). However, this measure did not differentiate explicitly between external/internal and quantitative/qualitative PE (Berntson, 2008; De Cuyper & De Witte, 2010; Rothwell & Arnold, 2007), an issue that might have been important to take into account. Nevertheless, the scale implicitly referred to external and quantitative PE by using a wording "an equivalent job in a different organization" in one of the four items. It is likely that university employees, who were the central employee group in this study, would like to stay at the university and not to be employed by any other organization. Hence it is also possible that internal quantitative (i.e., another job in the current organization) or internal qualitative (i.e., a better job in the current organization) PE would have had stronger associations with employees' well-being than external PE had in this study. Moreover, the level of internal PE could have shown larger changes over time due to changes that took place at the universities during the data collection.

Explanation rates. It is important to evaluate the practical importance of the results by looking at explanation rates (i.e., effect sizes). In this study the sample sizes were relative large so even small, practically non-significant associations may become statistically significant. In Study I, the whole model explained 15% of the variance of PE both at Time 1 and Time 2. Further, the baseline of PE explained 48% of the variance at Time 2. Two conclusions can be drawn. First, the previous level of PE can explain almost half of the variance of PE. Second, the remaining half of the variance is explained by several factors of which the three antecedents examined in this study were able to explain about a third. In Study II, the PE trajectories explained 5% of the variance of vigor at work, 3% of job satisfaction, and 2% of job exhaustion. It is clear that these proportions are small and thus other factors should be taken into account in order to reach higher explanation rates when explaining well-being of employees. In Study III, the whole model explained 5% of the variance of psychological symptoms in the cross-sectional sample and 7% in the longitudinal sample. The baseline of psychological symptoms explained 51% of the variance at Time 2. Thus, again, psychological symptoms seem to be quite stable over a

year and the antecedents in this study (i.e., demographics, PE, perceived job insecurity, and contract type) constitute only a relatively small portion of all the factors that have an effect. Furthermore, the interaction effects were small (i.e., they explained less than 1% of variance) in Studies I and III. However, when interpreting moderator effects it should be noted that they are difficult to detect in non-experimental field studies because researchers are unable to control the study setting in the same way as in experimental studies (McClelland & Judd, 1993). Therefore the importance of the interaction effects cannot be judged solely by their effect size but the meaningfulness of the interaction should also be taken into account.

Strengths of the study. Despite these limitations, this study also has methodological strengths. First, both variable-centered and person-centered analysis methods were used. Variable-centered methods are those commonly used in work and organizational psychology. They enable the investigation of associations on the average level of the data. However, the data may contain respondents that deviate significantly from the average pattern. With person-centered methods these deviations can be taken into account because the analyses look at the variables from the respondents' perspective and classify similar respondents into the same categories. Moreover, in this study, the person-centered method was applied to a longitudinal design, which meant that personal trajectories with different levels of and heterogeneous change in PE could be identified. In fact the longitudinal design with three measurement points is a clear strength of the present study (Kelloway & Francis, 2013). Second, in Study III two samples were used, namely the sample of university employees and a large cross-sectional data set, which represented the Finnish workforce. These two datasets differed in the characteristics of the samples and measures used but nevertheless the same results were obtained, thus increasing the external validity of the study.

4.3 Directions for future research

Although the previous chapter already hinted towards possible avenues for future research, also other opportunities for future research are seen that tie in with COR theory.

This study, in line with several other studies, suggested and also established that PE is positively related to well-being. Nevertheless, the process through which PE relates to well-being is unclear. Like earlier studies, also this study assumed that high PE enhances feelings of being control, which further leads to well-being, following the argumentation of COR theory (Hobfoll, 2002). However, none of these studies have empirically examined if perceived control actually serves as a mediator in this relationship. Thus, future studies could elaborate on the relationship between PE and well-being by including perceived control in the model. However, the nature of perceived control in relation to PE needs to be considered carefully, as several conceptualizations of control exist. Spector (1986), for example, understood perceived control as autonomy concerning an employee's current *job tasks* and to what extent she or he can decide how and when to do them. Ashford et al. (1989), in turn, conceptualized control in regard to the current *organization* and an employee's opportunities to control events in larger scale. Vander Elst (2013) utilized this scale to investigate perceived control as a mediator between perceived job insecurity and its outcomes. Nonetheless, in the context of PE, it might be necessary to understand perceived control in the light of the whole *career* as PE is about the transitions from one job to another.

The current study examined PE as a personal resource isolated from other personal resources. However, one of the central arguments in COR theory (Hobfoll, 2001) is that resources tie together in resource caravans. This means that having one resource is typically linked to having also other resources. Berntson et al. (2008), as the only example in this area, investigated how PE and self-efficacy are related. The authors concluded that although these two personal resources are correlated, they are separate constructs and higher PE seems to lead to higher self-efficacy and not vice versa. This is in contrast to the reciprocal relationship expected by COR theory. Thus, additional studies on resource caravans around PE are needed in order to understand the role of PE in developing the individual's resource caravan. Appealing resources include, for example, self-esteem (Rosenberg, 1965), sense of coherence (Antonovsky, 1979), and social support (Vaux, 1988). These resources are particularly interesting because, although they concern life in general, they also share similar characteristics similar to PE. Self-esteem encompasses beliefs, sense of coherence includes future orientation, and social support covers networks – all these aspects are also related to PE.

It is also suggested that some of the resources may have thresholds after which the advantageous effect of that resource disappears (Hobfoll, 2002). The congress proceeding by Peeters, De Cuyper, and De Witte (2012) presented this idea in regard to PE and job exhaustion. Nevertheless, the studies on thresholds are still scarce. To give another example, a threshold for PE could exist among job seekers. It is possible that job seekers with low PE have given up the job search in the beginning of the process, as they do not believe in their possibilities to get a new job. This unfavorable coping strategy will most likely result in unemployment and impaired well-being. Those with very high PE, in turn, may think that they do not need to put effort in job search because they will get a job in any case. However, if their employability beliefs are unrealistic, the most likely result is unemployment and well-being that is comparable to the job seekers with low PE. Consequently, there might exist an optimal level of PE for job seekers. Nevertheless, this idea is tentative but worth studying. This information would be useful from the viewpoint of PE interventions.

4.4 Implications of the study

This study has theoretical, methodological and practical implications. First, this study showed that PE can be viewed in light of COR theory (Hobfoll, 1989, 2001, 2002, 2011). It seems that PE provides control over the careers on the current unstable labor market and thus maintains well-being of the employees. Scholars are encouraged to build their studies about PE on this framework because it provides several fruitful viewpoints to PE as outlined above.

Second, change in PE was understood as heterogeneous and this approach gained support. With a person-centered approach, both the level of PE and different patterns of change were identified. Although person-centered methods are mostly exploratory, they can provide new insights to the data. Moreover, these methods might also provide a way for theoretical development on change as was requested by Kelloway and Francis (2013). Having said this, person-centered approaches should be utilized more frequently as they can trace individual patterns of change and stability.

Third, employees with stable low PE may feel trapped in their current jobs as they have low beliefs in their possibilities to get a new job. Consequently, they may report poorer well-being both at work and in general. However, this study also showed that PE is

amenable to changes and thus enhancement of PE could improve the situation of these employees. Furthermore, following the idea of resource caravans and gain spirals (Hobfoll, 2001), an increase in PE is likely to lead to increase in other related resources, which, in turn, would further enhance employees' well-being.

A structured intervention could be one way to enhance PE. Of the existing interventions, a resource-building group intervention developed by Vuori and his colleagues (2009) seems promising from the perspective of PE. This 1-week group intervention workshop is designed to increase individuals' skills in career management, which will eventually lead to better mental health (Vuori, Toppinen-Tanner, & Mutanen, 2012). A large effectiveness study was conducted in Finland during 2006–2010 and the results imply that immediately after the intervention, the participants reported enhanced career management in the form of higher self-efficacy and preparedness against setbacks (Vuori et al., 2012). Moreover, the enhanced career management fully mediated the effects to mental health measured after 7 months (i.e., lower depressive symptoms and higher mental resources). This intervention could be further developed by including also PE into the concept of career management. Furthermore, when investigating the effectiveness of the intervention, different aspects of career management (i.e., self-efficacy, PE, and preparedness against setbacks) could be compared in order to elaborate their relative importance in the intervention process.

TIIVISTELMÄ

Suomessa, kuten muuallakin maailmalla, työn epävarmuus on lisääntynyt organisaatioiden toistuvien alasajojen, irtisanomisten, lomautusten ja määräaikaisten työsuhteiden vuoksi. Edes ne, joilla on tällä hetkellä toistaiseksi voimassa oleva työsopimus, eivät välttämättä voi luottaa työpaikkansa pysyvyyteen. Koetun työn epävarmuuden ajatellaan johtavan siihen, ettei työntekijä koe enää pystyvänsä kontrolloimaan omaa työtilannettaan, mikä puolestaan aiheuttaa negatiivisia seurauksia yksilön hyvinvoinnille. Viime vuosina kirjallisuudessa onkin tuotu esille, että työn varmuuden kadottua työntekijöiden olisi hyvä keskittyä laajempaan, koko työuraan liittyvään kontrolliin. Keskeiseksi käsitteeksi on noussut työllistymisusko (engl. perceived employability), jolla tarkoitetaan työntekijän uskoa omiin mahdollisuuksiinsa saada uusi työ (Berntson ym., 2006; Rothwell & Arnold, 2007). Tällöin kontrollin tunnetta yksilölle tuo se, että hän luottaa työllistyvänsä ja pystyvänsä siirtymään työstä toiseen työuransa aikana.

Tämän väitöskirjan päätavoitteena oli tutkia, toimiiko työllistymisusko henkilökohtaisena voimavarana, joka auttaa yksilöä voimaan hyvin. Väitöskirjan oletukset nojaavat voimavarojen säilyttämisteoriaan (Hobfoll, 1989, 2001). Tämän teorian keskeisenä ajatuksena on, että ihmiset pyrkivät luonnostaan kartuttamaan, säilyttämään ja suojaamaan sellaisia asioita, joita he arvostavat. Tällaisia asioita Hobfoll nimittää voimavaroiksi, joista henkilökohtaiset voimavarat muodostavat yhden osa-alueen. Henkilökohtaiset voimavarat antavat yksilölle kokemuksen siitä, että hänen on mahdollista vaikuttaa ja toimia menestyksekkäästi omassa ympäristössään, mikä puolestaan vähentää kuormitusta ja parantaa hyvinvointia.

Tutkimus jakaantui kolmeen osatutkimukseen. Ensimmäisen osatutkimuksen tavoitteena oli selvittää, miten erilaiset yksilölliset tekijät ja tilannetekijät sekä näiden yhteisvaikutukset (interaktiot) vaikuttavat työllistymisuskon muodostumiseen. Tarkastelussa olivat työsuhdetyyppi (vakinainen vs. määräaikainen työ), mahdollisuus muuttaa työn perässä ja optimismi. Toinen osatutkimus keskittyi puolestaan tarkastelemaan työllistymisuskon trajektoreita eli sitä, miten työllistymisuskon taso muuttuu aineiston eri osaryhmissä kahden vuoden aikana. Lisäksi tutkittiin, miten nämä trajektorit ovat yhteydessä työntekijöiden hyvinvointiin. Kolmannen osatutkimuksen tarkoituksena oli tarkastella työllistymisuskoa ja työn epävarmuutta suhteessa toisiinsa ja hyvinvointiin koko aineistossa ja erikseen vakinaisten ja määräaikaisten työntekijöiden keskuudessa.

Tutkimus pohjautui kahteen suomalaiseen aineistoon. Ensimmäinen aineisto oli osa monitieteistä tutkimusprojektia ”Ovatko määräaikaiset huono-osaisia?”, jossa seurattiin kahden vuoden ajan kahden suomalaisen yliopiston työntekijöitä. Aineisto kerättiin elektronisesti kyselylomakkein kolmena peräkkäisenä syksynä 2008, 2009 ja 2010 (n_{T1} = 2137, n_{T2} = 1314, n_{T3} = 926). Toinen, puhelinhaastatteluin kerätty aineisto pohjautui kevään 2008 Tilastokeskuksen tekemään Työvoimatutkimukseen, joka on edustava otos suomalaisesta työväestöstä (n = 4392). Tutkimusaineisto analysoitiin tilastollisesti käyttäen pääasiallisesti hierarkkista regressioanalyysia, toistomittausten varianssianalyysia ja latenttia kasvukäyrämallinnusta.

Ensimmäinen osatutkimus osoitti, että työsuhteen vakinaisuus tai määräaikaisuus eivät suoraan ennustaneet työllistymisuskon tasoa vaan sekä vakinaiset että määräaikaiset raportoivat yhtä paljon uskoa omaan työllistymiseensä. Sen sijaan optimistinen

elämänasenne oli positiivisessa yhteydessä työllistymisuskoon kaikilla työntekijöillä: mitä optimistisempi suhtautuminen tulevaan, sitä voimakkaampi oli myös työllistymisusko. Lisäksi vakinaisilla työntekijöillä työllistymisusko oli sitä korkeampi, mitä paremmin työntekijät pystyivät muuttamaan nykyiseltä asuinpaikalta muualle uuden työn perässä.

Toinen osatutkimus näytti, että työllistymisuskossa tapahtuva muutos oli heterogeenista: toisilla työntekijöillä työllistymisuskon taso pysyi samana, toisilla se laski ja toisilla nousi. Tarkemmin sanottuna aineistosta pystyttiin löytämään neljä erilaista työllistymisuskon trajektoria. Kaksi isointa trajektoria olivat profiililtaan tasaisia: toisessa työllistymisusko pysyi tasaisen korkeana (n = 680; 73,4 %) ja toisessa tasaisen matalana (n = 134; 14,5 %). Kahdessa pienimmässä trajektorissa tapahtui puolestaan epälineaarista muutosta vastakkaisiin suuntiin: toisessa työllistymisusko ensin laski ja sitten nousi (n = 65; 7,0 %), kun toisessa työllistymisusko ensin nousi ja sitten laski (n = 47; 5,1 %). Tarmokkuus, työtyytyväisyys ja uupumusasteinen väsymys pysyivät koko aineistossa keskiarvoisesti samalla tasolla kahden vuoden seurannan ajan, mutta trajektorissa, jossa työllistymisusko lopuksi nousi, myös tarmokkuuden kokemukset lisääntyivät. Lisäksi työntekijät, jotka kuuluivat korkean ja tasaisen työllistymisuskon trajektoriin, raportoivat korkeampaa tarmokkuutta ja työtyytyväisyyttä ja matalampaa uupumusasteista väsymystä kuin ne työntekijät, jotka kuuluivat matalan ja tasaisen työllistymisuskon trajektoriin.

Kolmas osatutkimus paljasti, että työllistymisusko oli negatiivisessa yhteydessä työn epävarmuuteen. Toisin sanoen, mitä korkeampaa työllistymisusko oli, sitä matalammat olivat kokemukset työn epävarmuudesta. Työllistymisusko ei kuitenkaan suojannut epävarmuuden negatiivisilta hyvinvointiseurauksilta eli lisääntyneiltä psykologisilta stressioireilta. Lisäksi työllistymisusko yhdistyi parempaan hyvinvointiin kaikilla työntekijöillä, kun taas työn epävarmuuden negatiiviset hyvinvointiseuraukset kohdistuivat nimenomaan vakinaisiin eivätkä määräaikaisiin työntekijöihin.

Kaikkiaan tämän väitöskirjan päätulokset osoittavat, että työllistymisusko voidaan nähdä henkilökohtaisena voimavarana, sillä se yhdistyy positiivisiin hyvinvointiseurauksiin. Toisaalta työllistymisuskon pitää olla melko korkeaa, jotta hyvinvointikin on korkealla tasolla. Työllistymisusko näyttäisikin toimivan pikemmin hyvinvointia ylläpitävänä kuin sitä nostavana tekijänä. Kuitenkin työllistymisusko on myös jossain määrin altis muutoksille, joten työllistymisuskoa parantavat toimenpiteet voivat olla hyödyllisiä. Nämä parantavat toimenpiteet pitää kuitenkin suunnitella siten, että työntekijöiden sen hetkinen tilanne (esim. työsuhdetyyppi) otetaan huomioon, sillä työntekijän tilanne voi vaikuttaa siihen, mitkä tekijät ovat työllistymisuskon kannalta tärkeitä. Tämä tarkoittaa esimerkiksi sitä, että vakinaisille ja määräaikaisille työntekijöille räätälöidään erilaiset työllistymisuskoa parantavat toimet.

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Contract type, perceived mobility and optimism as antecedents of perceived employability

Kaisa Kirves
University of Tampere, Finland; KU Leuven, Belgium

Ulla Kinnunen
University of Tampere, Finland

Nele De Cuyper
KU Leuven, Belgium

Abstract

This study aims to examine how contract type, perceived mobility and optimism are linked to perceived employability (PE). The pattern of results was investigated first cross-sectionally (n = 1379, Time 1) and then longitudinally with a one-year time lag (n = 803, Time 2) with a sample of Finnish university researchers and teachers. Moderated hierarchical regression analyses showed that perceived mobility was positively associated with PE among permanent workers but not among temporary workers, whereas optimism was positively related to PE among all the workers at both Time 1 and Time 2. In light of these results, it seems that permanent employees especially benefit from perceived mobility in terms of higher PE, whereas optimism is beneficial for all employees' PE.

Keywords

Optimism, perceived employability, perceived mobility, temporary work

Introduction

In recent decades, demands for cost-effectiveness, restructuring and flattening hierarchies have changed working life. As a result, employees nowadays carry more responsibility

Corresponding author:
Kaisa Kirves, University of Tampere, School of Social Sciences and Humanities, Psychology, FI-33014 Tampere, Finland.
Email: kaisa.kirves@uta.fi

for their careers, allowing them to choose multidirectional career paths instead of linear ones (Baruch, 2004). At the same time, job security is threatened because organizations need to adapt flexibly to the turbulence on the labour market, for example, by employing temporary workers. Therefore perceived employability (PE), i.e. an employee's perception of how easy it is to find new employment (Berntson, 2008; Rothwell and Arnold, 2007; Wittekind et al., 2010), may be a critical resource when managing one's career or facing job insecurity (Fugate et al., 2004).

The body of empirical research on PE has grown in recent years but the antecedents of PE have received relatively little attention. Researchers have instead focused on the consequences of PE for jobs, organizations, careers and health (e.g. Berntson and Marklund, 2007; De Cuyper et al., 2008, 2011; Kinnunen et al., 2011), and on PE as a buffer between subjective job insecurity and health and work-related attitudes (Berntson et al., 2010; De Cuyper et al., 2009a; Kirves et al., 2011). As these earlier studies have shown that PE is overall beneficial (Berntson and Marklund, 2007; De Cuyper et al., 2011; Kinnunen et al., 2011; Kirves et al., 2011), it is important to identify factors that may help to enhance PE.

The few existing studies on the antecedents of PE are mainly based on human capital theory with a focus on education, competence and training (e.g. Van der Heijden et al., 2009; Wittekind et al., 2010). Other individual resources such as personality disposition have so far been neglected (for an exception see Berntson et al., 2006). Researchers (e.g. Berntson, 2008; Forrier et al., 2009) furthermore assume that PE is influenced by both situational factors (e.g. labour market opportunities) and individual resources (e.g. human capital and personality factors), and by factors that have both a situational and an individual component (e.g. willingness to change jobs). The interaction between different antecedents has also been highlighted: for example, individuals' perceptions in certain contexts (e.g. PE) are formed through their personality (Berntson, 2008; McQuaid and Lindsay, 2005), that is, people in the same objective situation may perceive the situation differently.

The aim in this study is to address this issue of interaction between different antecedents; an issue which, to the best of our knowledge, has not yet been examined. We see the different antecedents of PE along a continuum going from situational factors to individual factors, also covering factors with both situational and individual elements. More specifically, we investigate three antecedents of PE and their interaction, namely temporary employment as a situational factor, perceived mobility (i.e. the employees' perceived ability to move to another place because of a new job) as a factor based on both situational and individual elements, and optimism as an individual resource. We used a sample of Finnish university researchers and teachers both cross-sectionally and longitudinally with a one-year time lag. The longitudinal perspective allowed us to test whether the cross-sectional results found in a larger sample could be replicated after a year in a smaller sample of the same respondents.

From the viewpoint of theory construction, the findings of our study may add valuable insights as to how different combinations of individual and situational factors interact in relation to PE. From a practical point of view, our study sheds light on how to enhance PE, and whether a diversified strategy for temporary and permanent work is needed.

The concept of perceived employability

In our study, PE refers to a worker's beliefs about how easy it is to find new employment with another employer (i.e. on the external labour market; De Cuyper and De Witte, 2010; Rothwell and Arnold, 2007). Three aspects in this definition are important.

First, PE concerns the worker's beliefs. This means that the worker's perception is the critical factor: it is the perception of reality – rather than reality itself – that affects behaviour, feelings and thoughts (Katz and Kahn, 1978; Lazarus and Folkman, 1984). Second, our definition of PE focuses on employed persons. According to Hillage and Pollard (1998), PE is relevant in three different phases of the career: (1) when moving from education to work, (2) when applying for a job while unemployed and (3) when seeking a new job while employed. We focused on individuals in the last phase, when employed, because the perception of being employable is nowadays important not only for graduates and unemployed people but also for workers in the current labour market which is characterized by turbulence and insecurity. Third, our definition focuses on jobs outside the current organization rather than within the current organization. This distinction between external PE and internal PE has been made earlier (De Cuyper and De Witte, 2010; Rothwell and Arnold, 2007). Most studies to date, however, concern external PE. This may be because external PE, unlike internal PE, is unrelated to the structure of the current organization and therefore the results are more generalizable across organizations. By investigating external PE we continued this tradition but with the focus on antecedents of PE.

Antecedents of perceived employability

Many authors state that both individual and situational factors affect PE (Berntson, 2008; Forrier et al., 2009; McQuaid and Lindsay, 2005). By situational factors we mean contextual factors that are beyond an individual's control and can be objectively measured. The global economic situation, the number of jobs available and the type of job contract are examples of these (Berntson, 2008; Forrier et al., 2009). By individual factors, in contrast, we mean such personal factors as dispositions, attitudes and knowledge, that is, factors that are tied to an individual (Berntson, 2008; Forrier et al., 2009).

However, many of the antecedents of PE proposed in earlier studies (see Berntson, 2008; Forrier et al., 2009; Fugate et al., 2004; Griffeth et al., 2005; Wittekind et al., 2010) fall in between these two categories: they have elements of both situational and individual factors. Perceived willingness to change jobs or tasks is an example. Willingness to change jobs is an antecedent of PE because those willing to change jobs upon organizational change will have a broader range of opportunities (Wittekind et al., 2010). Moreover, willingness to change jobs is formed through both situational (e.g. economic conditions, wage setting, family situation) and individual (e.g. self-awareness, openness to change) factors (Forrier et al., 2009). Someone who is open to changes is more likely to be willing to change jobs, though perhaps less so if an organization implements a pay structure based on tenure. As a result, the antecedents of PE can be seen as forming a continuum from situational factors to individual factors. In the present study, contract type, perceived mobility and optimism were selected as the antecedents of PE reflecting the full range of factors contributing to PE.

Contract type

As noted earlier, PE matters in situations of insecurity. Insecurity may be inherent to the employee's specific contract type: temporary employment (i.e. employment of limited duration; OECD, 2002) is by definition insecure, as has been demonstrated quite extensively (e.g. De Cuyper and De Witte, 2005, 2007; De Witte and Näswall, 2003). Surprisingly, contract type has received less attention in the context of employability (for exceptions see De Cuyper and De Witte, 2010; De Cuyper et al., 2009b; Kinnunen et al., 2011). We see contract type as a situational factor influencing PE as described in Berntson (2008).

However, there are conflicting views on how contract type is related to PE. On the one hand, university temporary workers may perceive themselves to be more employable than permanent workers. The careers of highly educated temporary workers have characteristics of boundaryless careers (Marler et al., 2002). The boundaryless career model suggests that the employee is willing to work on a temporary basis because the employer offers challenging tasks that enhance competencies and skills of the employee. This, in turn, is positively related to the employee's employability and allows him or her move more flexibly in the labour market. Additionally, temporary workers are accustomed to continuously searching for a new job, following the labour market and matching their skills to the needs of the employers, which also enhances their perception of their own employability. On the other hand, permanent workers are considered as the core labour force (see Atkinson, 1984): this brings along good working conditions, employment stability and chances of advancement, which are all factors that may strengthen their profiles and labour market position. In contrast, temporary workers are often situated at the periphery of the labour market, and they are in a weak position vis-a-vis future employers. In this study, we aim to probe the relationship between contract type and PE along these conflicting views.

Perceived mobility

In the present study, we were interested in opportunities for residential mobility, by which we mean the opportunities an individual has to move to another place because of a new job (on residential mobility, see e.g. Böheim and Taylor, 2002; Van Ommeren et al., 2000). We consider that having (opportunities for residential) mobility is important for the level of PE because it broadens the labour market and thus the vacancies available to a person.

More specifically, we studied workers' own perceptions of their opportunities to be mobile, i.e. perceived mobility. On the one hand, this perception is based on situational circumstances: physical (e.g. geographic distances), family (e.g. children, spouse in permanent employment), financial (e.g. mortgages) and other (e.g. community participation) factors. On the other hand, individual tendencies may also have an effect. For example, those with an open attitude or those who are extremely ambitious may perceive their perceived mobility to be high despite the situational barriers. Perceived mobility sets the boundaries against which PE is evaluated. If the perception of one's own mobility is poor, then the field of potential job alternatives shrinks accordingly

(Griffeth et al., 2005). According to Griffeth et al. (2005), perceived mobility was positively associated with PE. This supports the idea that perceived mobility increases employment opportunities:

Hypothesis 1: Perceived mobility at Time 1 is positively related to PE at Time 1 (H1a) and Time 2 (H1b).

Optimism

Personality dispositions may be especially significant when studying employed persons' PE as in the present study. This is because employees are probably not generally actively seeking new jobs; therefore human capital factors may play a minor role in their PE evaluations. Instead, in this situation the PE evaluations may be based on the general tendency of perceiving situations, that is, personality factors. Researchers have linked PE, for example, to optimism, openness to change and new experiences, internal locus of control, self-efficacy and self-esteem (Berntson, 2008; Fugate et al., 2004). All these personality dispositions are related to the way an individual orientates to the future events and handles changes and challenges, therefore reflecting adaptability, which enables and motivates an individual to adapt his or her skills and knowledge to new circumstances (Forrier et al., 2009).

Of these dispositions we focused on optimism, which has not been examined in relation to PE thus far. We made this selection because it has been shown that although the basis for an optimistic life orientation is developed in childhood, it can be further developed in adulthood (Feldt et al., 2006). In other words, optimism is amenable to changes and therefore has resonance as an antecedent of PE. Optimism defined as generalized outcome expectancies is a tendency to believe that good instead of bad outcomes will occur in one's life (Scheier and Carver, 1985, 1992). This means that an optimistic person generally perceives daily events in a positive way and trusts that problems will be solved in a favourable manner (Scheier and Carver, 1985). Instead, a pessimistic person perceives situations more negatively and anticipates more negative outcomes.

Optimism has been positively related to respondents' confidence of securing an equally attractive job in two years from the time of the study (Knau and Knardahl, 2008). The argument is that individuals' actions are influenced by their anticipation regarding the outcomes of their action. Accordingly, optimism is part of the self-regulation of behaviour and adaptability (Fugate et al., 2004; Scheier and Carver, 1992) because individuals' expectations of the results determine whether they continue to strive or instead give up (Scheier and Carver, 1992). Furthermore, optimistic individuals have the tendency to perceive their goals to be attainable and hence continue to pursue them even in the face of adversity (Scheier and Carver, 1985, 1992). In addition, optimistic individuals may perceive changes of workplace or in the career as challenges (Fugate et al., 2004). All the features above support an active and adaptive career orientation, which, in turn, fosters PE (Forrier et al., 2009; Fugate et al., 2004):

Hypothesis 2: Optimism at Time 1 is positively related to PE at Time 1 (H2a) and Time 2 (H2b).

Interactions

We ground our view of PE in the interactionist perspective, which claims that an individual's perception is determined by the interplay between different situational and individual factors (Berntson, 2008; Forrier et al., 2009; McQuaid and Lindsay, 2005). This perspective means, for example, that when good times prevail on the labour market, individuals may perceive themselves as educated and competent enough to be employed (high PE) but in a time of recession these same individuals no longer believe in their chances of securing a new job because of tough competition (low PE). Despite the prior studies of employability, our study is the first to investigate the interaction of the three antecedents introduced.

We earlier assumed that perceived mobility is positively related to PE. Nevertheless we assume that this relationship might be different among permanent and temporary workers, i.e. it depends on contract type. Permanent and temporary workers differ regarding the kind of jobs they consider when assessing their employability. Permanent workers are likely to consider only permanent jobs, as permanent employment is highly valued in Finland (Lehto and Sutela, 2008) and temporary employment may signal a loss which is not compatible with PE. Temporary workers, by contrast, may consider both temporary and permanent vacancies. Moreover, temporary workers are used to changing jobs; they are more experienced in writing applications, and they are both less critical and more proactive when seeking a new job. Thus temporary workers may have more opportunities than permanent workers regardless of how mobile they are.

Because of these limited chances, perceived mobility may play a greater role for permanent workers. This is because moving is more likely to be the only way for permanent workers to find new jobs, whereas for temporary workers the immediate surroundings may offer more suitable alternatives. Perceived mobility may consequently be more strongly associated with PE among permanent than among temporary workers:

> *Hypothesis 3*: The association between perceived mobility and PE is stronger among permanent than among temporary workers (interaction Perceived mobility × Contract type) at Time 1 (H3a) and Time 2 (H3b).

We furthermore argue that optimism enhances PE especially among temporary workers. This is because temporary workers are constantly in a situation of future employment uncertainty after the current job contract expires. They therefore probably need to have an optimistic life orientation in order to believe in their own employability. Additionally, it is assumed that personality factors play an important role when job insecurity (subjective or objective) is prolonged (Roskies and Louis-Guerin, 1990), which is the case among temporary workers. Permanent workers, instead, are in a more secure situation and the need for optimistic views on employability may only emerge when other resources are threatened or lost. Consequently optimism may play a more significant role in maintaining PE among temporary than permanent workers:

Hypothesis 4: The association between optimism and PE is stronger among temporary than among permanent workers (interaction Optimism × Contract type) at Time 1 (H4a) and Time 2 (H4b).

When thinking about the interaction between perceived mobility and optimism, it is plausible to argue that in a situation where one's opportunities to move to another city are few, high optimistic life orientation becomes important to maintain PE as high. Said differently, when possibilities for relocating are not perceived as favourable, individuals probably need to have a tendency to believe that good things will happen in order to sustain their level of PE. In contrast, when perceived mobility is high then optimism does not play such an important role in relation to PE. Thus good opportunities to move to another place after a job yield more job opportunities in objective terms, which, in turn, means that optimism is not needed to maintain high PE in this more favourable situation:

Hypothesis 5: Optimism is more strongly related to PE when perceived mobility is low (interaction Perceived mobility × Optimism) at Time 1 (H5a) and Time 2 (H5b).

However, it should be noted that optimism cannot buffer against the effect of low perceived mobility on PE if the effect of mobility on PE does not exist at all or is too weak. Earlier we expected that perceived mobility would prove to be more strongly associated with PE among permanent workers and, consequently, we expect that the buffering effect of optimism is also stronger among them:

Hypothesis 6: Interaction of perceived mobility and optimism is stronger among permanent than among temporary workers (interaction Perceived mobility × Optimism × Contract type) at Time 1 (H6a) and Time 2 (H6b).

Method

Data collection procedure

The data used in this study were gathered as a part of a larger research project entitled 'Are Temporary Workers a Disadvantaged Group?' aiming to shed new light on the question of temporary employment and its consequences for well-being, job and organizational attitudes and work-related behaviour (see De Cuyper et al., 2012; Mäkikangas et al., 2012).

Data were collected from two multidisciplinary Finnish universities (referred here as university A and B) in autumn 2008 (Time 1) and one year later, in autumn 2009 (Time 2). Although an optimal follow-up period is difficult to define theoretically (Zapf et al., 1996), the one-year time lag is considered to be sufficient to reveal the effects of optimism and perceived mobility on PE based on a previous study on cross-lagged relationships between self-efficacy and PE (Berntson and Marklund, 2007). Universities were selected as the targets of the study because the percentage of temporary (i.e. fixed-term) contracts is high among university staff: in the participating universities 53% of the

personnel were employed on a temporary basis. Additionally, temporary contracts are relatively long, enabling a longitudinal study with a one-year interval without a substantial drop-out caused by naturally expiring contracts. In the present sample, the median length for temporary contracts was two years (SD = 2.47).

At Time 1 all employees working at least 20 hours per week were invited ($N = 4508$) to complete an electronic questionnaire. Altogether 2137 employees provided usable answers, resulting in a response rate of 47.4%. This sample represented the whole university staff well in terms of employee groups (i.e. teachers, researchers, administrative staff), but women (66% vs 61%, $p < .001$) and temporary workers (57% vs 53%, $p < .001$) were over-represented among the participants. The sample was restricted to include only teachers ($n = 720$) and researchers ($n = 682$), because temporary employment is concentrated on these employee groups. After listwise deletion, the effective sample size of the cross-sectional sample was 1379 respondents.

At Time 2, an invitation to complete the follow-up questionnaire was sent to those university employees who participated at Time 1 and were still working in the same university ($N = 2020$). The follow-up questionnaire was completed by 1314 employees. The response rate relative to Time 1 was 65.0% and over time 29.1%. Of these respondents, only teachers ($n = 446$) and researchers ($n = 406$) were selected. An additional restriction was also imposed by selecting only those teachers and researchers who had either a temporary or a permanent contract at both Times 1 and 2. Hence those respondents who transitioned from temporary to permanent employment ($n = 26$) or from permanent to temporary employment ($n = 11$) were excluded from the analyses. This was done in order to control for the possibility that such transitions might affect workers' perception of their employability (De Cuyper et al., 2009a). After listwise deletion, the effective sample size of the longitudinal sample was 803 respondents.

Participants and attrition analysis

Cross-sectional sample. Of the respondents at Time 1 ($n = 1379$), 56.6% were working at University A, 61.3% were women, and the average age was 41.9 years (SD = 11.2). Of these 27.8% had managerial tasks and 65.3% were temporary workers.

Longitudinal sample. Of the follow-up participants ($n = 803$), at Time 2 50.5% were working at University A, 62.4% were women, and the average age was 42.3 years (SD = 11.0). Of the respondents, 27.5% had managerial tasks and 61.6% were temporarily employed.

Sample attrition analyses revealed that the follow-up participants were more often permanent workers ($\chi^2(1, N = 1379) = 11.12$, $p = .001$) than those who dropped out ($n = 576$). University B employees were moreover over-represented at Time 2 ($\chi^2(1, N = 1379) = 30.08$, $p < .001$). No differences were found concerning gender ($\chi^2(1, N = 1379) = 0.88$, $p = .348$), age ($t(1377) = -1.40$, $p = .163$), having managerial tasks ($\chi^2(1, N = 1379) = .10$, $p = .751$), optimism ($t(1377) = -.79$, $p = .431$), perceived mobility ($t(1377) = .90$, $p = .367$) or perceived employability ($t(1377) = .44$, $p = .663$) (see also De Cuyper et al., 2012; Kirves et al., 2011; Mäkikangas et al., 2012).

Measures

Contract type. Contract type was dummy coded with 0 for permanent workers and 1 for temporary workers.

Perceived mobility. Perceived mobility was assessed using two items ('I am able to move to another place of residence now if a better job comes' and 'There are factors in my personal life [e.g. school age children, relatives, etc.] which make it very difficult for me to move in the near future' [reversed]) developed by Griffeth et al. (2005). The response scale ranged from 1 (totally disagree) to 7 (totally agree). One of the original perceived mobility items was dropped because it concerned only those in a pair relationship and hence would not have been suitable for singles. The correlation between the two perceived mobility items was .73 ($p < .001$) at Time 1.

Optimism. Optimism was measured with three items ('In uncertain times, I usually expect the best', 'I'm always optimistic about my future', 'Overall, I expect more good things to happen to me than bad') based on the Life Orientation Test-Revised (LOT-R; Scheier et al., 1994). Respondents noted their degree of agreement on a scale ranging from 1 (totally disagree) to 7 (totally agree). The Cronbach's alpha was .75 at Time 1. The original measure includes six items but those three items which had a positive wording were chosen because factor analyses have showed that these three items reflect optimism, whereas three negative worded items indicate pessimism (Kubzansky et al., 2004; Marshall et al., 1992; Robinson-Whelen et al., 1997). Additionally, a similar measure of optimism has been used in the study by Kronström et al. (2011) for example.

Perceived employability. Because a widely accepted measure of PE is still lacking, in the present study PE was assessed at Time 1 and 2 with four items adapted from two earlier studies: 'Given my qualifications and experience, getting a new job would not be very hard at all', 'I can think of a number of organizations that would probably offer me a job if I was looking', 'My experience is in demand on the labour market' and 'It would not be very difficult for me to get an equivalent job in a different organization'. The first two items were adapted from Griffeth et al. (2005) and the last two from Berntson and Marklund (2007). The responses were given on a scale from 1 (totally disagree) to 7 (totally agree). The reliability was .89 at Time 1 and .87 at Time 2. These four items were selected because they have shown discriminant validity in earlier studies and they reflect important factors when perceiving one's own employability, i.e. skills, experience and knowledge in current labour market. Additionally, this measure has been used in a study by De Cuyper et al. (2011).

Control variables. Four control variables were considered: gender (0 = female, 1 = male) and age (in years) at Time 1 as demographics, and managerial tasks (0 = no, 1 = yes) and organization (0 = University A, 1 = University B) at Time 1 as work-related control variables. By including these control variables in the model, the intent was to determine the incremental contribution that perceived mobility, optimism, contract type and their interactions make to the prediction of PE after these control variables have been taken into account. The universities are situated in cities that differ in size and distance from

the metropolitan area and hence career opportunities likely differ between employees of University A and University B. Furthermore, earlier studies have reported that men (Berntson and Marklund, 2008), younger workers (Van der Heijden, 2002; Wittekind et al., 2010), those having managerial tasks (Rothwell and Arnold, 2007; Wittekind et al., 2010) and living in an area with more career opportunities (Berntson et al., 2006; Wittekind et al., 2010) have higher PE.

Analyses

First, to ensure that the concepts in this study were separate, confirmatory factor analyses were conducted using the Mplus statistical package (Version 5.2; Muthén and Muthén, 1998–2007) with maximum likelihood estimation (ML). A one-factor model in which all items loaded on the same factor was compared to a two-factor model in which the items of PE and perceived mobility loaded on one factor and the items of optimism on the second factor. Then the expected three-factor model (items of PE, perceived mobility, optimism load each on separate factors) was compared to a two-factor model. The latent factors were allowed to correlate. The models were compared using the χ^2-difference test. Additionally, the fit of the model was evaluated using CFI (comparative fit index; Bentler, 1990), TLI (Tucker–Lewis index; Tucker and Lewis, 1973), RMSEA (root mean square error of approximation) and SRMR (standardized root mean square residual). Acceptable threshold levels for these fit indices are as follows: CFI and TLI > .95 (Schermelleh-Englel et al., 2003), RMSEA < .07 (Steiger, 1990) and SRMR < .08 (Hu and Bentler, 1999).

Second, the hypotheses were tested with moderated hierarchical regression analysis (Cohen et al., 2003). PE at Time 1 was regressed on contract type, perceived mobility and optimism in step 1. In step 2, we entered the two-way interaction terms namely Perceived mobility × Contract type, Optimism × Contract type and Perceived mobility × Optimism. In step 3, the three-way interaction term, namely Perceived mobility × Optimism × Contract type, was introduced. In calculating the interaction terms, orthogonalized product terms (Little et al., 2006) were used in order to avoid multicollinearity. When predicting PE at Time 2, PE measured at Time 1 (step 4) was additionally entered to control for its effect. Entering the baseline of PE in the last step makes it possible to compare first the longitudinal relationships with the cross-sectional ones and then investigate the longitudinal effects with the baseline controlled for. Statistically significant interactions were plotted and simple slopes calculated. Analyses were conducted with and without the control variables (gender, age, managerial tasks and organization). Because the results were essentially identical, only the results without controls are presented here following the recommendation by Becker (2005), Spector and Brannick (2011) and Carlson and Wu (2012).

Results

Discriminant validity of the constructs: Confirmatory factor analyses

The CFAs showed that the two-factor model, $\chi^2(26) = 1195.87$, $p < .001$, CFI = .772, TLI = .684, RMSEA = .179 [.171–.188], SRMR = .101, had a better fit than the one-factor

Table 1. Characteristics of the permanent and temporary workers.

	Permanent workers		Temporary workers		Difference tests
	N	% / *M* (SD)	*N*	% / *M* (SD)	
Gender					
Female	273	57.0	573	63.7	$\chi^2(1, 1379) = 5.87$, $p = .015$
Male	206	43.0	327	36.6	
Organization					
University A	279	58.2	502	55.8	$\chi^2(1, 1379) = .78$, $p = .378$
University B	200	41.8	398	44.2	
Managerial tasks					
No	308	64.3	687	76.3	$\chi^2(1, 1379) = 22.53$, $p < .001$
Yes	171	35.7	213	23.7	
Age	479	51.14 (8.25)	900	36.98 (9.28)	$t(1377) = 28.02$, $p < .001$
Perceived mobility	479	3.22 (1.98)	900	3.46 (1.95)	$t(1377) = -2.10$, $p = .036$
Optimism	479	5.10 (1.05)	900	4.84 (1.09)	$t(1377) = 4.20$, $p < .001$
PE T1	479	4.51 (1.35)	900	4.30 (1.31)	$t(1377) = 2.82$, $p = .005$
PE T2	308	4.48 (1.40)	495	4.21 (1.33)	$t(801) = 2.78$, $p = .006$

Note: The variables were measured at Time 1 if not otherwise stated.

model, $\chi^2(27) = 2053.08$, $p < .001$, CFI = .605, TLI = .474, RMSEA = .231 [.223–.240], SRMR = .138, $\Delta\chi^2(1) = 857.21$, $p < .001$. Furthermore, the expected three-factor model (PE, perceived mobility, optimism), $\chi^2(25) = 124.36$, $p < .001$, CFI = .981, TLI = .972, RMSEA = .053 [.044–.063], SRMR = .025, showed a better fit than the two-factor model, $\Delta\chi^2(1) = 1071.51$, $p < .001$. All the item loadings were statistically significant, ranging from .59 to .89. Accordingly perceived mobility, optimism and PE were all distinct concepts.[1]

Descriptive results

As can be seen from Table 1, temporary workers were more often women, younger, without managerial tasks and they rated their perceived mobility as higher, optimism as lower,and PE as lower than permanent workers. In addition, the level of PE was the same after a year in both employee groups.

The pattern of correlations (Table 2) is quite similar at Times 1 and 2. Only two of the significant correlations in the cross-sectional sample did not reach statistical significance in the longitudinal sample due to the smaller sample size. Optimism and perceived mobility were not related to each other but both correlated positively with PE at Time 1 and at Time 2. The correlation between PE at Time 1 and Time 2 was high.

Test of hypotheses

The patterns of results for predicting PE at Time 1 and Time 2 are shown in Table 3 (cross-sectional sample results on the left side and longitudinal sample results on the right side).

Table 2. Correlations between the study variables for Time 1 (N = 1379; above diagonal) and Time 2 (N = 803; below diagonal).

	1	2	3	4	5	6	7	8
1. Gender	–	.08**	.17**	–.12**	.07*	–.02	–.07**	.11**
2. Age	.11**	–	.19**	.03	–.12**	.12**	–.60**	.08**
3. Managerial tasks	.17**	.19**	–	–.01	.03	.05*	–.13**	.20**
4. Organization	–.10**	.06*	.00	–	–.11**	–.04	.02	.02
5. Perceived mobility	.04	–.13**	.00	–.13**	–	.01	.06*	.12**
6. Optimism	–.00	.13**	.06*	–.04	.04	–	–.11**	.35**
7. Contract type	–.09**	–.62**	–.15**	.01	.07	–.15**	–	–.08**
8. PE Time 1	.08*	.05	.20**	.02	.15**	.37**	–.07*	–
9. PE Time 2	.04	.07*	.21**	.00	.10**	.35**	–.10**	.78**

Note: Gender: female = 0, male = 1; managerial tasks: no = 0, yes = 1; organization: University A = 0, University B = 1; contract type: permanent = 0, temporary = 1.
*p < .05, **p< .01

Table 3. Hierarchical moderated regression analysis for PE at Time 1 and Time 2.

	PE Time 1 (N = 1379)			PE Time 2 (N = 803)			
	Step 1	Step 2	Step 3	Step 1	Step 2	Step 3	Step 4
Contract type	–.04	–.04	–.04	–.05	–.05	–.05	–.04
Perceived mobility	.12***	.12***	.12***	.09**	.09**	.09**	–.01
Optimism	.35***	.34***	.34***	.33***	.33***	.33***	.06*
Perceived mobility × Contract type		–.06*	–.06*		–.11**	–.11**	–.05*
Optimism × Contract type		.02	.02		.00	.00	.01
Perceived mobility × Optimism		.00	.00		–.02	–.02	–.02
Perceived mobility × Optimism × Contract type			.07**			.06	.01
PE							.76***
R^2	.140***	.145***	.149***	.130***	.141***	.145***	.622***
ΔR^2	.140***	.004	.005**	.130***	.011*	.004	.477***

Note: All predictors come from Time 1. Contract type: permanent = 0, temporary = 1.
*p < .05,**p < .01, ***p < .001.

Cross-sectional results. In step 1, contract type was not related to PE. Perceived mobility and optimism were positively associated with PE supporting hypotheses 1a and 2a respectively. Step 2 introduced the two-way interactions (hypotheses 3–5a). The interaction term Perceived mobility × Contract type was significantly related to PE. The simple slope analysis showed that the positive relationship between perceived mobility and PE was stronger among permanent (β = .23, p < .001) than among temporary (β = .08, p = .024) workers (Figure 1). Accordingly hypothesis 3a gained support, whereas hypotheses 4a and 5a did not.

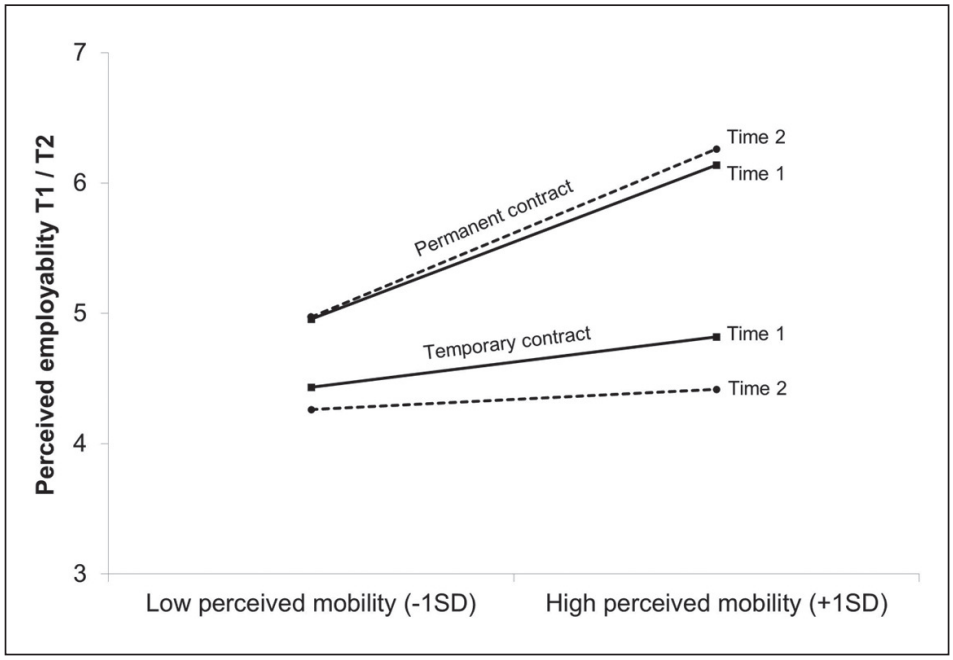

Figure 1. Interaction of perceived mobility and contract type at Time 1 (solid line) and at Time 2 (dotted line).

The three-way interaction term introduced in step 3 was also statistically significant. Permanent workers with low perceived opportunities to move to another place perceived their employability to be higher when they were optimistic (β = .39, $p < .001$). Instead, if moving opportunities were estimated to be high, optimism did not play as an important role (β = .20, $p = .001$; difference $p = .031$). Hence optimism seemed to be related to permanent workers' PE especially in a low perceived mobility situation. In contrast, among temporary workers high optimism was positively related to PE when perceived mobility was low (β = .32, $p < .001$) and also when perceived mobility was high (β = .41, $p < .001$; difference $p = .106$). Hypothesis 6a was supported.

Longitudinal results. When explaining PE after a year, the pattern of results was somewhat similar to the pattern reported above. Contract type was not significantly associated with PE at Time 2. Hypothesis 1b was partially and 2b fully supported: perceived mobility and optimism were positively related to PE at Time 2. However, the relationship between perceived mobility and PE failed to retain its significance when PE at Time 1 was controlled for. Additionally, only the interaction Perceived mobility × Contract type was significantly related to PE in the longitudinal sample and showed the same pattern (Figure 1) as in the cross-sectional analysis. The positive relationship between perceived mobility and PE was found only among permanent (β = .24, $p = .001$) and not among temporary (β = .03, $p = .507$) workers. Thus hypothesis 3b was supported while 4b and 5b were not. Nevertheless, the longitudinal results did not replicate all the cross-sectional results: the three-way interaction Perceived mobility × Optimism × Contract type was not significantly related to PE (no support for hypothesis 6b).

Discussion

This study aimed to contribute to the employability literature by investigating three antecedents of PE. The same moderated hierarchical regression analysis model was tested both cross-sectionally and longitudinally with a one-year time lag. This allowed us to use first a larger sample with no attrition problems and then test if the findings also held a year later and with a smaller sample of the same respondents. As an overall conclusion, the results were mainly unchanged and highlighted the importance of different combinations of antecedents in predicting PE.

Of the three antecedents, contract type was not directly related to PE at Time 1 or at Time 2. While perceived mobility (H1) was positively associated with PE only at Time 1, optimism (H2) was positively related to PE at both times. However, perceived mobility was more strongly and positively associated with PE among permanent workers both in the cross-sectional and in the longitudinal sample as we expected (H3). In other words, perceiving oneself to be able to move to another place because of a new job is likely to be positively related to permanent workers' PE. Permanent workers are likely to focus on permanent jobs and to exclude temporary jobs: accordingly, they need to have a larger geographical field for job search. If in such circumstances they evaluate their mobility to be high, their PE is also high. Our results also indicate that the positive effect of perceived mobility was seen to persist for over a year among permanent workers. Perceived mobility was not important for PE among temporary workers. Consequently it is crucial to enhance perceptions of mobility among permanent university workers to optimize their PE. Becoming aware of the importance of mobility could be a first step in that direction.

Third, optimism was positively and equally strongly associated with PE among permanent and temporary workers in both data sets and contrary to our assumptions. We expected (H4) that optimism would be needed to maintain PE especially among temporary workers. It is possible that the changes in the legislation in the Finnish universities, which occurred during the period of the study, have made permanent workers also insecure about their futures. The new Universities Act (558/2009) increased the autonomy of the universities, but simultaneously made the employment relation of the university personnel more insecure. They therefore seemed to need optimism as much as temporary workers to maintain their level of PE. Optimistic life orientation can be acquired and fostered through cognitive training techniques when learning to overcome self-defeating beliefs (Schulman, 1999).

Finally, the interaction effect between optimism and perceived mobility was not statistically significant in the total sample (H5), probably because further analyses revealed that this interaction was significant among permanent but not among temporary workers (H6). Among permanent workers, optimism was positively related to PE even more strongly under the condition of low perceived mobility: despite the low perceived opportunities to move to another city for a new job, optimistic workers had the same level of PE as workers with high perceived mobility. By contrast, among temporary workers optimism enhanced PE despite the level of perceived mobility. These results reflect the different significance of perceived mobility for permanent and temporary workers: permanent workers need to be more mobile in order to see equivalent employment opportunities while perceived mobility does not play a role among temporary workers even if their optimism is low. The three-way interaction effect was not seen in the longitudinal sample when explaining PE at Time 2, however. This may be due to the smaller sample

size, as we know that interaction effects are more easily found in large samples (McClelland and Judd, 1993).

Limitations and suggestions for future research

Like all research, this study has some limitations. First, our study concentrated on university workers, namely researchers and teachers. Although this restriction was appropriate for the aims of the study, it also limits possible generalization of the results. University researchers and teachers are highly educated specialists and hence their employment opportunities are limited. This means that our results may be generalizable only to highly educated university workers and to specialists. Future research is needed to investigate other occupational groups, e.g. blue-collar workers.

Second, we also used a longitudinal sample in order to verify the results of the cross-sectional sample which cannot reveal causal effects. Nevertheless, the longitudinal sample raises the question of attrition of participants. Our analyses did reveal a systematic drop-out of temporary workers and University A workers from Time 1 to Time 2. The reason for the former is short fixed-term contracts which had expired before Time 2 data collection. The latter attrition is related to the problems with the updating of the email system at University A in autumn 2009. However, there was no systematic drop-out in relation to the core study variables; and we therefore believe that drop-outs did not affect our longitudinal results. A further concern with this two-wave data set relates to identification of participants and issues related to confidentiality: as is common with longitudinal data, we invited workers who participated at Time 1 to participate also at Time 2. However, we informed the respondents that identification would only be used for reasons of contact and for matching the questionnaires. We furthermore strictly followed a procedure where only one researcher had access to the data set including identification.

Third, we used self-reports in order to test our research questions. It is possible that the relationships found were inflated due to common method variance. However, we feel confident that the risk of inflated relationships does not account for the interaction results obtained in our study because it has been shown that common method variance is likely to attenuate rather than inflate the interaction effects (Evans, 1985) and the pattern of the results was similar in the longitudinal sample.

Fourth, the effects of the interactions were rather small. However, when interpreting moderator effects it should be noted that they are difficult to detect in non-experimental field studies because researchers are unable to control the study setting in the same way as in experimental studies (McClelland and Judd, 1993). Therefore the importance of the interaction effects cannot be judged solely by their effect size but the meaningfulness of the interaction should also be taken into account.

Conclusions

Our study demonstrated that the antecedents of PE were partly dependent on contract type. First, perceived mobility enhanced PE among permanent but not among temporary workers. Second, among permanent university workers high optimism enhanced PE under conditions of low perceived mobility while temporary workers benefited from

strong optimism despite the level of perceived mobility. The results obtained in our study are particularly interesting from the employability literature perspective due to consideration of the interaction design and contract type. In addition, from the perspective of temporary employment literature, our study demonstrated that temporary vs permanent employment may be an important consideration in the debate. The interaction perspective on the antecedents of PE deserves more research in the future. Furthermore, the results are also relevant from the human resources management (HRM) perspective, in that they may help to target PE enhancement strategies more efficiently when the antecedents are known for the respective worker groups.

Declaration of conflicting interests

The author declares that there is no conflict of interest.

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Note

1. When comparing CFAs conducted separately among permanent and temporary workers, it was found that perceived mobility, optimism and PE were measured with the same metric among these employee groups, $\chi^2(53) = 173.64$, $p < .001$, CFI = .976, TLI = .968, RMSEA = .057 [.048–.067], SRMR = .031 (unconstrained loadings), $\chi^2(59) = 179.05$, $p < .001$, CFI = .977, TLI = .971, RMSEA = .054 [.044–.063], SRMR = .037 (equal loadings), $\Delta\chi^2(1) = 5.41$, $p = .492$.

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Author biographies

Kaisa Kirves is a doctoral student at the School of Social Sciences and Humanities in the University of Tampere, Finland, and at the Research Group Work, Organizational and Personnel Psychology, Katholieke Universiteit Leuven, Belgium. Her main research interests are temporary employment, perceived employability and employee well-being.

Ulla Kinnunen is Professor of Psychology at the School of Social Sciences and Humanities in the University of Tampere, Finland. At the present her research interests focus on occupational well-being from the perspectives of stress, burnout and recovery, including research on job insecurity and temporary employment, leadership and the work–family interface.

Nele De Cuyper is Assistant Professor at the Research Group Work, Organizational and Personnel Psychology, Katholieke Universiteit Leuven, Belgium. Her main research interests include flexible employment, temporary employment in particular, employability and employee well-being and attitudes in general.

Original Article

Trajectories of Perceived Employability and Their Associations With Well-Being at Work

A Three-Wave Study

Kaisa Kirves,[1,2] Ulla Kinnunen,[1] Nele De Cuyper,[2] and Anne Mäkikangas[3]

[1]School of Social Sciences and Humanities, University of Tampere, Finland, [2]Research Group Work, Organizational, and Personnel Psychology, K.U. Leuven, Belgium, [3]Department of Psychology, University of Jyväskylä, Finland

Abstract. The first aim of this study was to identify trajectories of perceived employability (PE) with a longitudinal person-centered approach, accounting for both the level of PE and changes in PE. The second aim was to examine how the trajectories were related to well-being at work (i.e., vigor at work, job satisfaction, and job exhaustion) with a variable-centered approach. The data were collected in two Finnish universities (N = 926) during 2008–2010 with three measurement points. Growth Mixture Modeling identified four trajectories, which differed in level, stability, and change in PE across time: we established two trajectories with stable PE (88% of the participants), and two trajectories with a nonlinear change pattern in PE (12%). Furthermore, variable-centered analyses showed that the level of PE was positively associated with well-being at work. Moreover, in one change trajectory, the increase in PE was associated with an increase in vigor at work. Overall, these results indicate that PE can be seen as a personal resource. However, the effect of PE is minor in terms of change in employee well-being among highly educated employees.

Keywords: perceived employability, vigor at work, job satisfaction, job exhaustion, growth mixture modeling

Perceived employability (PE) refers to an employee's perception of how easy it is to find new employment (Berntson, Sverke, & Marklund, 2006; Rothwell & Arnold, 2007). Employees with high PE have skills and experience that are transferable across different jobs, and that are in demand on the labor market (De Cuyper, Mäkikangas, Kinnunen, Mauno, & De Witte, 2012). PE is assumed to be a personal resource according to the definition advanced in conservation of resources (COR) theory (De Cuyper et al., 2012; Hobfoll, 1989). In COR theory, personal resources are defined as aspects of the self that are linked to individual resiliency (Hobfoll, Johnson, Ennis, & Jackson, 2003). COR theory includes a dynamic view on resources: besides the level of resources, resource losses and gains are the mechanisms that drive stress and coping processes and consequently affect well-being across time (Hobfoll, 2001; Hobfoll et al., 2003). These dynamic processes of resource losses and gains can be identified through longitudinal studies.

However, studies on the long-term development of PE are still scarce (for exceptions see Berntson, Näswall, & Sverke, 2008; Mäkikangas, De Cuyper, Mauno, & Kinnunen, 2013). Moreover, we do not know whether potential changes in PE owing to losses and gains are reflected in employee well-being as suggested by COR theory. We believe these aspects require further attention, both from the perspective of scholars and practitioners. Theoretically, examining the development of PE may help to enrich the theoretical notion of PE as a personal resource. For practitioners, understanding the long-term relationship between PE and well-being is helpful in prevention and in designing interventions.

In response to these gaps in the PE literature, our study has two aims. Our primary aim is to examine *change* in PE over time, also accounting for the level of PE. A particular feature of this study is that we acknowledge that change in psychosocial constructs like PE is usually *heterogeneous*: some people change while others remain stable, and the pattern of change varies across individuals (Mroczek, Almeida, Spiro, & Pafford, 2006). We achieve this aim by using a study design with three measurement points with one-year time lags, and by adopting a person-centered approach. This approach results in PE trajectories: these trajectories highlight subgroups of individuals, each of whom shows a different pattern of stability and change of PE at different levels of PE.

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Our second aim is to investigate how the PE trajectories relate to employees' well-being at work, much in line with the principles of COR theory (Hobfoll, 2001). In this study, well-being refers to vigor at work, job satisfaction, and job exhaustion. This selection covers positive, neutral, and negative aspects of well-being at work.

In all, our study combines a person-centered approach (PE trajectories) with a variable-centered approach (associations with well-being), and allows to simultaneously examine the level and the stability/change in PE and well-being over a period of two years.

The Person-Centered Approach to Perceived Employability

Perceived Employability as a Personal Resource

The focus of the present study is on employees' perceptions of their employability (i.e., perceived employability, PE). We are interested in employees' perceptions because people tend to behave according to their perceptions rather than according to objective reality (Lazarus & Folkman, 1984). We see PE as a personal resource, much in line with COR theory (Hobfoll, 1989). Personal resources are factors that are valued by the individual and help to attain new resources. They are those aspects of self, which help an individual to control and impact upon the surrounding environment (Hobfoll et al., 2003). We believe PE is a resource for two reasons.

First, PE is similar to self-efficacy, which is often advanced as a resource (Berntson et al., 2008). Self-efficacy reflects one's belief in succeeding or being competent in a specific task (Bandura, 1997). That said, we believe that PE is a context-specific personal resource that supports individuals' ability to cope with change (De Cuyper et al., 2012; Silla, De Cuyper, Gracia, Peiró, & De Witte, 2009). In other words, when employees have strong faith in their prospects on the labor market, that is, they have high PE, they feel in control of their careers and able to change the situation whenever they feel it is necessary.

Second, PE can be nurtured by both individual (e.g., knowledge, skills, abilities, networks, dispositions) and situational factors (e.g., access to training and HR practices; e.g., Berntson et al., 2006; McQuaid & Lindsay, 2005). The implication is that PE is amenable to changes over time. For instance, a PhD student may perceive his or her level of PE to be increased after the dissertation is published (higher education), or a researcher not getting funding for a research program may lose his or her trust in oneself (lower self-efficacy) and thus feel that his or her employability is also reduced.

Perceived Employability Trajectories

Studies investigating changes in resources are scarce (for an exception, see Mäkikangas, Bakker, Aunola, & Demerouti, 2010), and on PE virtually nonexistent. The first longitudinal study on PE was conducted by Berntson et al. (2008). In their cross-lagged model with a one-year time lag, the rank-order stability coefficient for PE was .83. This variable-centered approach suggested that change in PE occurred at least among some employees, though overall PE seemed to be relatively stable. However, with this analytical procedure it was not possible to tap change in PE in more detail.

Change may go in two directions: a decrease or an increase from a previous time point. A longitudinal variable-centered approach (e.g., latent growth modeling, see Muthén & Muthén, 1998–2007) makes it possible to model the overall change in the data, negative for a decrease and positive for an increase. What is lacking in this type of analysis, however, is the idea that change in psychological constructs is likely heterogeneous (Mroczek et al., 2006). Heterogeneous change means that, for example, PE may decline among some individuals, remain stable among others, and yet improve among others. To detect heterogeneous change, a person-centered approach is needed to identify these qualitatively different subpopulations (Wang, Sinclair, Zhou, & Sears, 2013). We label the different subpopulations of PE as *PE trajectories*.

We chose to study PE trajectories through the use of latent (unobserved) categorical variable (Wang et al., 2013). The reason is that this approach addresses some of the problems related to other approaches. First, groups of decreasing, stable, and increasing PE can be distinguished based on difference scores (for a detailed procedure, see Hobfoll et al., 2003). However, this approach does not take into account the *level* of PE, which is also an important factor affecting well-being according to COR theory (Hobfoll, 2001). Second, one can define cut-off values for PE and classify participants into predefined low, average, and high classes of PE at each time point. After this, individual trajectories can be identified: for example, low PE at *T*1, average PE at *T*2, and high PE at *T*3 indicating an increasing PE trajectory. However, with three measurement points this approach can produce up to 27 PE trajectories. Moreover, defining the cut-off values for PE is arbitrary as there are no validated cut-off points for PE.

The use of a latent categorical variable when investigating a concept (i.e., PE) over time refers to Growth Mixture Modeling (GMM; Muthén, 2006). This analysis is not based on predefined trajectories, but instead classifies individuals into trajectories based on the level and change in PE across time. As a result, PE trajectories will differ not only at the level of the PE (e.g., low vs. high level) but possibly also in the pattern of change (e.g., decreasing, stable, or increasing pattern) (Mroczek et al., 2006). Furthermore, GMM indicates the smallest number of PE trajectories needed to cover the main subpopulations in the sample.

Mäkikangas et al. (2013) used a person-centered approach vis-à-vis PE based on GMM with two-wave data. They showed that PE tended to be relatively stable among Finnish university employees over one year. Nevertheless, the results also revealed heterogeneity in the change in PE. The four latent classes of PE identified were different in size, level, and direction of linear mean-level change.

Stability characterized the two largest classes: 49% of employees reported relatively high and 46% relatively low PE. Change in PE showed two patterns: decreasing (3%) and increasing (2%) levels of PE.

Our Study

We build on the study by Mäkikangas et al. (2013) by extending the research period by one year: the rate and shape of change can be modeled more accurately with more than two measurement points (Rogosa, Brandt, & Zimowski, 1982). In fact, Kelloway and Francis (2013) argue that longitudinal studies on change should have at least three measurement points to capture both linear and nonlinear changes. Thus we follow the same university employees as in the study by Mäkikangas and her colleagues for two years, from 2008 to 2010.

Given the findings by Mäkikangas et al. (2013) and Berntson et al. (2008), we expect that the majority of the participants belong to the stable PE trajectories. Moreover, we also assume that changes in the level of PE are evident and that both linear and nonlinear changes is possible. Linear change means that PE gradually increases or decreases from *T*1 to *T*3. Nonlinear or quadratic change, in turn, means that the level of PE, after increasing or decreasing from *T*1 to *T*2, returns at *T*3 (near) to its baseline level. Linear change implies that the factors influencing PE (e.g., new skills acquired through training, new social networks) also change linearly while quadratic change can be a sign of a momentary improvement or deterioration in the factors on which PE is based. Furthermore, the level of PE may differ between PE trajectories although the stability or shape of the change is similar as reported in the study by Mäkikangas et al. (2013). As a result our first hypothesis reads as follows:

Hypothesis 1. Three PE trajectories with a different change pattern are identified: (1) a trajectory with a stable level of PE over time (i.e., no change), (2) a trajectory with a decreasing level of PE, and (3) a trajectory with an increasing level of PE. Additionally, it is expected that some PE trajectories can have the same change pattern but differ only in the level of PE.

The Variable-Centered Approach to Perceived Employability Trajectories and Well-Being

Our second aim is to investigate how the PE trajectories differ in work-related well-being across the three measurement points. Thus we combine a person-centered approach (PE trajectories) with a variable-centered approach (well-being differences) and examine the relations between PE and well-being longitudinally. This extends the previous study by Mäkikangas et al. (2013), in which the role of job insecurity in the development of PE was examined.

In our study we present a more complete picture of psychological well-being than earlier studies by investigating three concepts representing the different combinations of valence and activation proposed by Warr (2013). These concepts are vigor at work (i.e., having high levels of energy and mental resilience while working; Schaufeli, Bakker, & Salanova, 2006), job satisfaction (i.e., individuals' global feeling about their job; Spector, 1997), and job exhaustion (i.e., lack of energy and a sense of emotional resources being fully consumed by work; Maslach, Jackson, & Leiter, 1996). While vigor at work has positive valence and high activation and job exhaustion has negative valence and low activation, job satisfaction falls in between these two, being neutral by both valence and activation.

Job exhaustion is labeled as the core dimension of burnout and as such it has been studied more widely than the other two dimensions of burnout (Maslach, Schaufeli, & Leiter, 2001). Vigor at work, in turn, is a sub-dimension of work engagement (Schaufeli, Salanova, Gonzáles-Romá, & Bakker, 2002), and is considered to be the key dimension of work engagement (Shirom, 2010). We focused on vigor and exhaustion as these have been shown to be independent constructs and not only endpoints of the same energy construct (Demerouti, Moster, & Bakker, 2010; Mäkikangas, Feldt, Kinnunen, & Tolvanen, 2012). Thus it is possible that their developmental paths are separate from each other: although exhaustion may show a decrease along with a change to higher PE, it is not certain that this change will be followed by an increase in vigor or vice versa.

The relation between PE trajectories and well-being is examined from two perspectives based on COR theory (Hobfoll, 2001). First, the *level* of PE in different PE trajectories is taken into account. Personal resources are strongly linked to well-being and health, as noted in COR theory and in empirical findings (for an overview, see Hobfoll, 2002). Individuals with many resources are more adaptive and can solve life difficulties and achieve their goals more successfully than those with fewer resources (Hobfoll, 2002). This leads to lower levels of strain, which in turn, enhances well-being. In the context of work and PE in particular, this means that employees with higher PE are able to meet the challenges posed by changes and uncertainty more successfully than employees with lower PE. Consequently their strain levels are lower, they can concentrate on the work at hand, and they report good well-being. In line with this reasoning, several studies have demonstrated the positive relation between PE and well-being, mainly cross-sectionally (e.g., Berntson & Marklund, 2007; De Cuyper, Bernhard-Oettel, Berntson, De Witte, & Alarco, 2008; De Cuyper, De Witte, Kinnunen, & Nätti, 2010; De Cuyper, Notelaers, & De Witte, 2009; Kinnunen, Mäkikangas, Mauno, Siponen, & Nätti, 2011), though two-wave studies also exist (Berntson & Marklund, 2007; De Cuyper et al., 2012; Kirves, De Cuyper, Kinnunen, & Nätti, 2011). As a consequence, our hypothesis reads as follows:

Hypothesis 2. Over time, PE trajectories with higher levels of PE are associated with higher vigor at work, higher job satisfaction, and lower job exhaustion.

Second, *change and stability* in PE trajectories are taken into account. We explore the relation between changes in PE and changes in well-being for the first time. This may lead to valuable insights into the theoretical assumption that PE is a personal resource: as COR theory states, changes in personal resources are assumed to relate to similar changes in well-being (Hobfoll, 2001; Hobfoll et al., 2003). In other words, PE can be considered to be an effective personal resource when changes in PE relate to changes in well-being. Moreover, in a more practical sense, this association would imply that it is worth investing in PE in order to enhance one's well-being.

In terms of COR theory (Hobfoll, 2001), decreasing levels of PE can be interpreted as a resource loss, which is associated with heightened strain and, consequently, relates to impaired well-being. Increasing levels of PE, in turn, are a resource gain (Hobfoll, 2001) that reduces strain and thus improves well-being. As a consequence, our hypothesis reads as follows:

*Hypothesis 3. C*hanges in the level of PE among specific trajectories are associated with similar changes in vigor at work, job satisfaction, and job exhaustion.

Method

Context and Data Collection

The participants of the present study were employees working in two multidisciplinary Finnish universities. Data were collected as a part of a larger research project entitled "Are temporary workers a disadvantaged group?" (see De Cuyper et al., 2012; Mäkikangas et al., 2013) via electronic questionnaires in autumn 2008 (*T*1), 2009 (*T*2), and 2010 (*T*3). At *T*1, all employees working at least 20 hours per week were invited (N = 4,508) and altogether 2,137 participated (response rate 47.4%). At *T*2, an invitation was sent to those who participated at *T*1 and were still working in the same university (N = 2,020). This time the questionnaire was completed by 1,314 employees (response rate 65.0%). At *T*3, the same procedure was repeated resulting in 926 responses to 1,225 invitations (response rate 75.6%). Thus 20.5% of the original sample continued in the study for two years.

During the data collection years the Finnish university system underwent major changes due to the new law (the Universities Act (558/2009)). The greatest changes occurred at two levels: (1) the ownership of the universities changed from predominantly state-owned to predominantly privately owned organizations and (2) the employees' status as civil servants changed, which also changed the legislation concerning the benefits and protection against dismissal. Given the magnitude of the changes, it is likely that they also increased demands and created uncertainty among university employees, which, in turn, calls for personal flexibility in the form of employability (Van der Heijde & Van der Heijden, 2006). For this reason, we deem this context suitable for investigating PE as a personal resource.

Participants

Of the 926 participants 66.6% were women. The participants were 22 to 65 years old with an average age of 43.8 years (SD = 10.49). The majority (64.6%) held an academic position and the administrative staff (35.4%) delivers supporting services, for example, in library, IT, management, and maintenance. About half of the participants worked on a permanent employment contract at *T*1 (49.4%), at *T*2 (51.4%), and at *T*3 (55.3%). Moreover, 89.7% of the participants reported having the same contract type, either temporary (42.5%) or permanent (47.2%), from *T*1 to *T*3. A small minority had moved either from temporary to permanent employment (8.1%) or from permanent to temporary employment (2.2%) during the two years. It should be noted that the samples of the universities were largely similar in terms of background characteristics and the overall level of PE over time. The only differences were in gender and age: employees in university "A" (n = 500) were more often female, $\chi^2(1, 926) = 6.44$, $p = .011$, 63.0% versus 65.0%, and younger, $t(924) = -2.19$, $p = .029$, 43.13 versus 44.64 years, than employees in university "B" (n = 426). The final sample of 926 participants was representative of the total population in the two universities at *T*1 with regard to the proportion of permanent employees, but older employees, women, and academic staff were overrepresented (detailed results upon request from the first author).

In analyzing the sample attrition the respondents at *T*3 (n = 926) were compared with the nonrespondents at *T*3 (n = 1,211). The results indicated that there were more permanent employees among the respondents than among the nonrespondents, $\chi^2(1, 2137) = 29.77$, $p < .001$, 49.4% versus 37.6%. Additionally, the respondents were older, $t(2135) = 3.55$, $p < .001$, $M = 43.81$ versus $M = 42.1$, and they reported higher job satisfaction at *T*1, $t(2135) = 3.26$, $p < .001$), $M = 5.41$ versus $M = 5.23$, $p = .001$, than did the nonrespondents. No differences were found concerning gender, $\chi^2(1, 2137) = 0.57$, $p = .451$, personnel group, $\chi^2(1, 2137) = 0.76$, $p = .382$, vigor at work, $t(2135) = 1.30$, $p = .193$, job exhaustion, $t(2135) = 0.77$, $p = .445$, or PE, $t(2135) = 1.71$, $p = .088$.

Measures

All instruments were measured at *T*1–*T*3.

Perceived employability was measured with three items ("Given my qualifications and experience, getting a new job would not be very hard at all," "I can think of a number of organizations that would probably offer me a job if I was looking," "My experience is in demand on the labor market") adapted from Griffeth, Steel, Allen, and Bryan (2005), and Berntson and Marklund (2007). The responses were given on a scale from 1 (totally disagree) to 7 (totally

agree). These items reflect the core of PE, that is, an individual's belief in his or her possibilities on the labor market, and have also been used in other studies (e.g., De Cuyper et al., 2012). The Cronbach's alpha was .84 at *T*1, .86 at *T*2, and .86 at *T*3.

Vigor at work was measured with three items ("At my work, I feel that I am bursting with energy," "At my job, I feel strong and vigorous," "When I get up in the morning, I feel like going to work") from the Utrecht Work Engagement Scale-Short Form (UWES-9; Schaufeli et al., 2006). The responses were given on a scale from 1 (never) to 7 (always). The Cronbach's alpha was .89 at T1, .90 at *T*2, and .91 at *T*3.

Job satisfaction was measured with one question: How satisfied are you with your job? The responses were given on a scale from 1 (very dissatisfied) to 7 (very satisfied). A meta-analysis by Wanous, Reichers, and Hudy (1997) shows that single-item measures of job satisfaction are reliable and robust and thus acceptable.

Job exhaustion was measured with three items (e.g., "I feel emotionally drained from my job") from the 5-item Finnish version of the Maslach Burnout Inventory-General Survey (Kalimo, Hakanen, & Toppinen-Tanner, 2006; Maslach et al., 1996). The responses were given on a scale from 1 (never) to 7 (always). Because the space in the questionnaire was limited, we selected those three items of the original five items which referred to severe fatigue. The Cronbach's alpha was .89 at *T*1, .89 at *T*2, and .90 at *T*3.

Control variables. Gender (1 = women, 2 = men), age (in years), personnel group (1 = academic, 2 = administrative) at *T*1, and contract type (1 = permanent, 2 = temporary) at *T*1–*T*3 were considered as possible control variables, because these have been related to occupational well-being (Kinnunen, Feldt, & Mäkikangas, 2008; Mauno, Kinnunen, Mäkikangas, & Nätti, 2005).

Data Analysis

Person-Centered Approach

The second-order growth mixture model (SOGMM; Grimm & Ram, 2009) was used to identify unobserved subsamples (trajectories) which differed in the level and rate of change in PE across two years (2008–2010). The SOGMM is a growth mixture model (GMM; Muthén, 2006) with latent factors instead of directly measured variables. The analysis was performed using the Mplus statistical package (Version 5.2) with maximum likelihood estimation with robust standard errors (MLR).

The SOGMM was built through four steps (Grimm & Ram, 2009). First, a longitudinal measurement model was built. The fit of the model was evaluated using the comparative fit index (CFI), the Tucker-Lewis index (TLI), the root mean square error of approximation (RMSEA), and the standardized root mean square residual (SRMR). Acceptable threshold levels for these fit indexes are the following: CFI and TLI > .97, RMSEA < .08, and SRMR < .10 (Schermelleh-Engel, Moosbrugger, & Müller, 2003).

Second, measurement constraints were added to check whether the same PE construct was measured across years. Both the factor loadings, the intercepts, and variances of residuals were estimated as equal over time in order to ensure that change was similar in all items observed (i.e., strict factorial invariance, Meredith & Teresi, 2006). The constrained model was compared to the baseline model using the following cut-off criteria suggested by Chen (2007): ΔCFI < −.01, ΔRMSEA < .02, and ΔSRMR < .03 indicate invariance. The Chi-square difference test was not used for the comparison, as it is sensitive to sample size and as such may suggest rejecting a model although the discrepancy is trivial (Chen, 2007).

Third, different second-order latent growth models were constructed to establish a baseline model for comparisons with the SOGMMs. In other words, the second-order growth factors, an intercept factor capturing between-person differences, and slope factors capturing within-person differences in the rate of change during *T*1 to T3, were added to the model. The factor loadings for the intercept were fixed at 1 and the loadings for the slope defined the shape of change. For the linear slope the loadings were fixed at 0, 1, and 2. For the quadratic, nonlinear slope the loadings were fixed at 0, 1, and 4. More specifically, three different models were tested: (1) with intercept only (i.e., no change), (2) with intercept and linear slope (i.e., linear change), and (3) with intercept, linear slope, and quadratic slope (i.e., quadratic change). As earlier, the fit of these growth models was evaluated with CFI, TLI, RMSEA, and SRMR. Additionally, the Bayesian Information Criterion (BIC) was used to decide which of the models was the most parsimonious (smaller values suggesting a better fit) and to be used in further analyses.

Fourth, a mixture model was built to estimate a growth model separately to each trajectory. Various considerations were used when deciding the number of trajectories in the SOGMM (Jung & Wickrama, 2008): (a) the Bayesian Information Criterion (BIC), (b) the Vuong-Lo-Mendell-Rubin (VLMR) test, (c) the Lo-Mendell-Rubin test (LMR), (d) the Bootstrapped Likelihood Ratio Test (BLRT), (e) high entropy value, (f) successful convergence, (g) at least 1% of the participants in a trajectory, and (h) meaningful trajectories. In VLMR, LMR, and BLRT a low *p*-value ($p < .05$) indicates that k trajectories are enough compared to $k + 1$ trajectories. After deciding the number of trajectories, the solution was replicated with different seed values in order to be sure that the solution was global instead of local (see, e.g., Jung & Wickrama, 2008). Moreover, the final trajectory solution was cross-validated by running the same model separately in the two universities. If the same trajectories can be found in both samples, it implies that the trajectories identified are genuine and not arbitrary.

Variable-Centered Approach

After identifying trajectories, we examined whether they differed in the background characteristics (i.e., gender, age, personnel group, and contract type) using χ^2-tests

and *F*-test. Additionally, we examined whether the trajectories differed in work-related well-being (see Hypotheses 2 and 3) using multivariate analysis of covariance (MANCOVA) for repeated measures. The PE trajectory served as a between-group variable and time was a repeated measure. In order to tap the pure relationship between trajectories and outcomes, the background characteristics which were associated with the trajectories and at least with one of the outcome variables served as control variables. The multivariate analyses were followed by univariate analyses. In case of significant main effects, post hoc comparisons were performed on the dependent variables using Bonferroni's test.

Results

Person-Centered Approach: Perceived Employability Trajectories

The estimated *longitudinal measurement model* of PE showed a good fit to the data (CFI = .99, TLI = .99, RMSEA = .04 [.03–.06], SRMR = .02), and the factor loadings were high (.73–.92).

When testing *measurement invariance constraints*, the strict invariance model (with invariant factor loadings, intercepts, and variances of the residuals) fitted the data well (CFI = .99, TLI = .98, RMSEA = .05 [.04–.06], SRMR = .03) without a substantial loss of fit compared to the baseline model (ΔCFI = .00, ΔRMSEA = .01, ΔSRMR = .01). Thus the same latent construct was measured at each time point in the same metric. Additionally, stability of PE across time was high: .85 between *T*1 and *T*2 and .82 between *T*2 and *T*3.

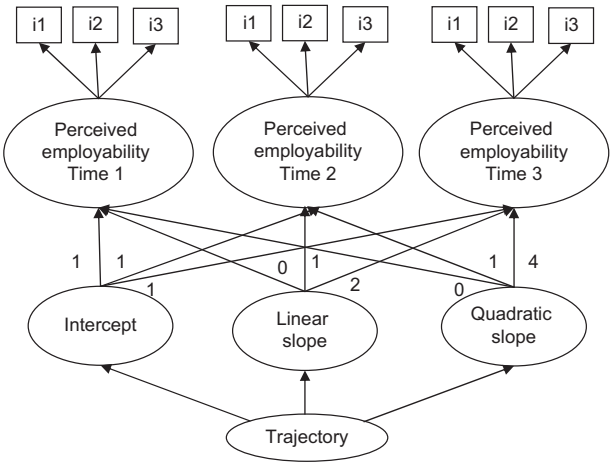

Figure 1. The estimated second-order growth mixture model. i1–i3 = perceived employability items. Also the error terms of the items and the factors were estimated but arrows representing them were omitted from the figure for the sake of simplicity and readability.

Table 1. Fit indexes and tests for SOGMM models of perceived employability with different numbers of trajectories

Number of trajectories	Log likelihood	BIC	VLMR *p*-value	LMR *p*-value	Entropy	BLRT *p*-value	Group sizes *n* (%)
1	−12357.4	24851.32	–	–	–	–	926 (100.0)
2	−12324.5	24812.99	.000	.000	.611	.000	178 (19.2), 748 (80.8)
3	−12308.8	24808.78	.074	.081	.756	.000	14 (1.5), 172 (18.5), 740 (79.9)
4	−12278.8	24776.22	.004	.005	.779	.000	47 (5.1), 65 (7.0), 134 (14.5), 680 (73.4)
5	−12266.8*	24779.52	.321	.332	.805	.000	13 (1.4), 47 (5.1), 49 (5.3), 136 (14.7), 681 (73.5)
6	−12250.6*	24774.43	.076	.080	.804	.000	18 (1.9), 30 (3.2), 31 (3.4), 47 (5.1), 138 (14.9), 662 (71.5)
7	−12239.7*	24779.95	.215	.223	.774	.000	14 (1.5), 19 (2.1), 28 (3.0), 45 (4.9), 121 (13.1), 245 (26.5), 454 (49.0)

Note. *The best likelihood value was not replicated.

Across three different *second-order growth models* the quadratic growth model was the best fitting model (CFI = .99, TLI = .98, RMSEA = .05 [.04–.06], SRMR = .03, BIC = 24834.59, Figure 1) compared to the model with only intercept factor (CFI = .86, TLI = .87, RMSEA = .13 [.12–.14], SRMR = .06, BIC = 25422.11) and the linear growth model (CFI = .93, TLI = .93, RMSEA = .10 [.09–.11], SRMR = .04, BIC = 25124.05).

The fit indexes and statistical tests for the alternative PE trajectory solutions across the three measurements are shown in Table 1. The one-trajectory solution modeled the overall development of PE over time. It showed that the variance in the level of PE (i.e., intercept, $s^2 = 1.16$, $p < .001$) and in the change in PE (i.e., linear slope, $s_l^2 = 1.14$, $p < .001$; quadratic slope, $s_q^2 = 0.28$, $p < .001$) was significant and thus it was justified to continue with the search for the optimal number of trajectories.

The four-trajectory solution was supported based on the lowest BIC value and the lowest nonsignificant effect of VLMR and LMR tests. The *p*-values of BLRT test were always below .05 as the number of trajectories increased. However, the solutions with more than four trajectories were not trustworthy because the best loglikelihood values were not replicated implying problems in convergence (Jung & Wickrama, 2008). This seems to support the view that four trajectories are sufficient to cover the different patterns of stability and change in our data. Furthermore, the entropy value in this solution was relatively high, the size of each trajectory was more than 1%, and each trajectory had a meaningful interpretation.

Figure 2 and Tables 2 and 3 present the four-trajectory solution, which consisted of two trajectories with a stable PE differing only in the level of PE and two trajectories with quadratic changes in PE across time. These trajectories were in line with our first hypothesis.

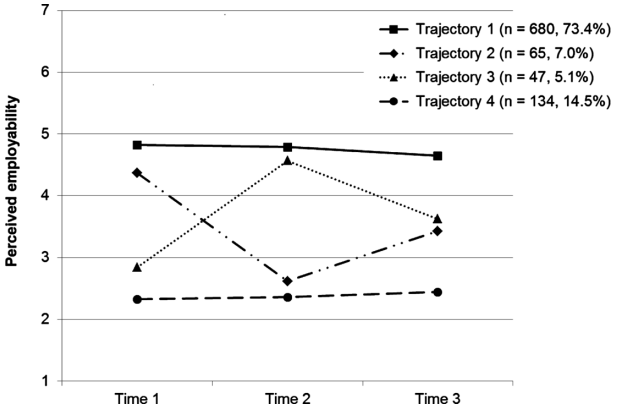

Figure 2. Trajectories of perceived employability across three measurement points.

To cross-validate this solution we also ran the GMM analyses separately in the two universities. In both university samples the four-trajectory solution produced the same trajectories as in the whole data. Detailed information about the results can be obtained on request from the first author.

Of the two stable trajectories (1 and 4), trajectory 1 was the largest and was characterized by PE which was at about the same relatively high level across time, although PE at *T*3 was slightly lower than PE at *T*1 and *T*2. Trajectory 4 was characterized by a relatively low stable PE across two years. The two trajectories with changes in the mean level of PE were trajectory 2 and trajectory 3 with the smallest share of participants. In trajectory 2, the level of PE showed first a decrease from *T*1 to *T*2 and then an increase from *T*2 to *T*3. However, the level of PE at *T*3 did not reach the baseline level. The same pattern but in

Table 2. Standardized estimated parameters for trajectories of perceived employability

	Intercept			Linear slope			Quadratic slope		
Trajectory	Estimate	SE	*p*-value	Estimate	*SE*	*p*-value	Estimate	*SE*	*p*-value
(1) Relatively high and stable	2.74	.23	.000	–0.01	.09	.942	–0.14	.07	.046
(2) Decrease and increase	2.26	.30	.000	–4.35	.62	.000	2.90	.45	.000
(3) Increase and decrease	0.38	.26	.140	4.22	.68	.000	–2.99	.55	.000
(4) Relatively low and stable	0.00*	.00	.999	0.00*	.00	.999	0.00*	.00	.999

Note. *Fixed.

Table 3. Differences in Perceived Employability between Trajectories ($n = 926$)

	Perceived employability (*M*)				
Trajectory	Time 1	Time 2	Time 3	Overall	Time differences[a]
(1) Relatively high stable ($n = 680$)	4.82	4.79	4.65	4.75	*T*1 = *T*2 > *T*3
(2) Decrease and increase ($n = 65$)	4.36	2.62	3.43	3.47	*T*1 > *T*2 < *T*3
(3) Increase and decrease ($n = 47$)	2.84	4.57	3.62	3.68	*T*1 < *T*2 > *T*3
(4) Relatively low stable ($n = 134$)	2.33	2.36	2.44	2.38	*T*1 = *T*2 = *T*3
Trajectory differences[a]	1 > 2 > 3 > 4	1 = 3 > 2 = 4	1 > 2 = 3 > 4	1 > 2 = 3 > 4	

Note. [a]Pairwise comparisons adjusted for multiple comparisons (Bonferroni), $p < .05$.

an opposite direction was evident in trajectory 3. The level of PE indicated first an increase from *T*1 to *T*2 and then a decrease from *T*2 to *T*3. The level of PE at *T*3 stayed above the level of PE at *T*1.

At *T*1 all four trajectories differed from each other in the level of PE (see Table 3). At *T*2, the level of PE in trajectory 2 was similar to the level of trajectory 4, and the level of PE in trajectory 3 was similar to trajectory 1. At the last measurement point and overall (i.e., a grand mean of all three time points) the trajectories with changes no longer differed from each other while all the other differences were statistically significant.

Variable-Centered Approach: Differences in Well-Being at Work

The PE trajectories did not differ in any of the demographic characteristics examined (i.e., gender, age, personnel group, contract type). Furthermore, the changes in employment contract from *T*1 to *T*2 and further to *T*3 were not significantly associated with the trajectories.[1]

Variables representing well-being at work, namely, vigor at work, job satisfaction, and job exhaustion correlated from moderately to strongly (r = |.44–.72|) thus supporting the use of multivariate analysis. Additionally, age, gender, and contract type correlated with at least one of the outcomes.[1] However, because the background characteristics did not associate with the trajectories, the multivariate analysis of variance for repeated measures (4 trajectory × 3 time) was conducted without control variables. The multivariate tests (Table 4) showed significant effects for *trajectories* and the *trajectory* × *time interaction* while the time effect did not reach statistical significance. At the univariate level, the trajectory effect was statistically significant on all well-being variables. The interaction effect, instead, was significant only for vigor at work.

Table 5 presents means of well-being variables within trajectories both separately at each time point and overall. Our hypothesis 2 stated that over time, PE trajectories with higher levels of PE are associated with better well-being. This assumption was partly supported. Employees in trajectory 1 with a relatively high PE over time also reported greater vigor at work and job satisfaction and less job exhaustion than employees in trajectory 4 with a relatively low PE over time. However, employees in trajectories 2 and 3 (both with average level of PE over time) did not differ from those in trajectory 1 or trajectory 4.

According to our hypothesis 3, trajectories with changes in PE should also reflect similar changes in all well-being variables. However, the interaction effect was significant only for vigor at work. Among employees in trajectory 2, which showed first a decrease in PE (*T*1–*T*2) and then an increase (*T*2–*T*3), the level of vigor at work did not change from *T*1 to *T*2 (p = 1.000) but at *T*3 vigor was higher than at *T*1 (p = .034) and marginally higher than at *T*2 (p = .090). Among employees in trajectory 3, which showed first an increase in PE (*T*1–*T*2) and then an increase (*T*2–*T*3), the level of vigor did not change over time (p = .151–1.000). Thus hypothesis 3 was partly supported.

Table 4. Results of MANOVA for repeated measures (n = 926)

	Trajectory effect[a]				Time effect				Trajectory × Time effect[b]			
	F	*df*	*p*	H^2	*F*	*df*	*p*	η^2	*F*	*df*	*p*	η^2
Multivariate	5.38	9, 2766	< .001	.02	0.88	6, 917	.509	.01	2.09	18, 2757	.005	.01
Univariate												
Vigor at work	15.32	3, 922	< .001	.05	0.22	2, 1844	.807	.00	3.64	6, 1844	.001	.01
Job satisfaction	10.92	3, 922	< .001	.03	1.16	2, 1844	.313	.00	1.44	6, 1844	.194	.00
Job exhaustion	7.65	3, 922	< .001	.02	0.39	2, 1844	.678	.00	1.59	6, 1844	.145	.01

Note. [a]For further analyses, see Table 5; [b]For further analyses, see text.

Table 5. Differences in well-being at work between trajectories of perceived employability (n = 926)

	Vigor at work				Job satisfaction				Job exhaustion			
	M				*M*				*M*			
	*T*1	*T*2	*T*3	Overall	*T*1	*T*2	*T*3	Overall	*T*1	*T*2	*T*3	Overall
(1) Relatively high stable (n = 680)	4.96	4.95	4.95	4.95	5.51	5.58	5.46	5.52	3.08	3.12	3.10	3.10
(2) Decrease and increase (n = 65)	4.58	4.60	4.85	4.68	5.31	5.02	5.22	5.18	3.40	3.36	3.13	3.29
(3) Increase and decrease (n = 47)	4.72	4.70	4.45	4.62	5.28	5.24	5.11	5.21	3.47	3.36	3.57	3.46
(4) Relatively low stable (n = 134)	4.36	4.46	4.42	4.41	5.00	5.10	4.94	5.01	3.58	3.56	3.58	3.57
Trajectory differences[a]	1 = 2 = 3 > 4				1 = 2 = 3 > 4				1 = 2 = 3 < 4			

Note. [a] Pairwise comparisons with Bonferroni's test with p < .05 using the overall means.

[1] Detailed information about the results is available upon request from the first author.

Discussion

The two aims of the present study were (1) to identify PE trajectories over two years with three measurement points using a person-centered approach, and (2) to investigate how these PE trajectories were related to well-being (vigor at work, job satisfaction, and job exhaustion) during the two-year period with a variable-centered approach. By doing so, this study goes a step further in explaining the relation between PE and well-being over time following the assumptions of COR theory (Hobfoll, 2001; Hobfoll et al., 2003). Our study took into account the level, stability, and change of PE and combined person- and variable-centered approaches. In addition, we took a broad approach vis-à-vis well-being at work.

Main Findings

We identified four PE trajectories, which differed from each other in size, level, stability, and change in PE over time. These results supported our assumption that change in PE is heterogeneous (Mroczek et al., 2006). The majority, 88% of the participants, belonged to two trajectories with stable PE. These trajectories differed only in the level of PE, so they were named "relatively high stable PE" (73.4%) and "relatively low stable PE" (14.5%). Overall, university employees' perception of their employability showed quite a stable pattern over a two-year follow-up period. It may, for instance, be that PE is strongly based on stable personality characteristics (e.g., optimism, see Kirves, Kinnunen, & De Cuyper, 2013) or at least our measurement of PE may cover more strongly those factors which change in the long term (e.g., experience, demands of the labor market).

Nevertheless, 12% of the employees reported change in PE over time. These trajectories were named "decrease and increase in PE" (7.0%) and "increase and decrease in PE" (5.1%) to describe the quadratic change, which was evident in the data. The decrease and increase in PE from *T*1 and *T*2 in these trajectories replicated the finding of Mäkikangas et al. (2013). However, with an additional measurement point we were able to see that change in PE between *T*2 and *T*3 approached the baseline level. We can speculate that changes planned and initiated at universities at *T*1 enhanced employability perceptions among some workers who appraised these changes as challenges but impaired these perceptions among others who appraised these changes as demanding at *T*2. At time 3, employees may eventually have evaluated the organizational changes as rather small and not having direct consequences on them. Thus, after some of the changes were implemented and the employees perceived the effects of these changes, their level of PE may approach the baseline level. We concede that our explanation is tentative.

The possible associations between PE trajectories and well-being at work were hypothesized based on COR theory (Hobfoll, 2001, 2002). The assumptions concerned both the level of PE and change in PE over time. The results suggested that the overall level of PE was associated with the overall level of well-being when the trajectories with the highest and lowest overall level of PE were compared. More specifically, employees with higher stable levels of PE reported – as expected – more vigor at work and job satisfaction, and less job exhaustion than employees with lower levels of PE. Nevertheless, the two trajectories with an average overall level of PE did not differ in well-being when compared to the other trajectories. These results seem to indicate that PE is a personal resource because of the relationship with well-being. However, the level of PE needs to be relatively high before such relationships occur.

The relationships between changes in PE and concurrent changes in well-being were few and thus only partially supported our hypothesis. Of all comparisons made, only vigor at work increased as PE increased among the trajectory "decrease and increase in PE." Our conclusion is that change in PE may not have a decisive effect on change in well-being. We realize, however, that this observation may be specific to this study for several reasons. First, the small group sizes of the PE change trajectories may partly explain these nonsignificant interaction results. Second, the changes in PE may not be reflected in well-being at work with one-year time lags. They may need less or more time to elapse to manifest as changes in well-being at work (Frese & Zapf, 1988). Third, it may be that the internal labor market is more important for university employees than the external labor market as universities offer specific career paths for academics. Therefore internal PE would be a more effective personal resource for them (for internal PE see De Cuyper & De Witte, 2010 and Rothwell & Arnold, 2007). In this study, the measurement did not make an explicit distinction between internal and external PE but is, however, biased toward external PE.

The PE trajectories were related to vigor at work, job satisfaction, and job exhaustion almost with the same pattern, although these well-being indicators had differences in valence and activation. The differences between trajectories in vigor at work (η^2 = .05), nevertheless, were larger than in job satisfaction (η^2 = .03) and job exhaustion (η^2 = .02). Moreover, the only interaction effect was evident only for vigor at work. Following the reasoning of COR theory about resource caravans, this may indicate that PE as a personal resource releases other resources (e.g., self-esteem, self-efficacy) and is accompanied with positive emotions, which gives additional energy to enjoy one's job (Berntson et al., 2008; Hobfoll, 2002).

From HRM practitioners' point of view, the alarming observation is that almost 15% of the participants (n = 134) reported continuously low levels of PE while 12% employees (n = 112) were able to increase their perception of employability. Moreover, the trajectory with relatively low stable PE was associated with the lowest levels of vigor at work and job satisfaction and the highest level of job exhaustion among university employees. It is possible that these employees feel they have lost control over their careers because of the lack of perceived future work opportunities, which is already reflected in their well-being in the current job. Providing additional training, increasing aware-

ness of own competencies, or enlarging the social networks are examples of possible means toward improving their situation (e.g., Wittekind et al., 2010).

Limitations and Future Directions

This study has limitations which should be taken into account when interpreting the results. First, the sample raises possible concerns. The response rates were rather low, and it seems that older employees, women, and academic staff were overrepresented in the sample compared to the population. Furthermore, the dropout analysis revealed a systematic pattern: those who replied at all three time points were more often permanent employees, older, and they had higher job satisfaction. Dropout of temporary employees was likely caused by expired contracts whereas higher age and job satisfaction were related to the higher share of permanent employees. Thus, our results may be biased owing to self-selection according to the type of employment contract. We also acknowledge that our sample consisted of mainly highly educated Finnish university employees and thus direct generalizations of the results to other occupations and organizations should be made with caution. Additionally, although the timing of the study was appropriate for studying employability because of changes at universities, the global economic crisis could also have had an impact on how university employees perceived their future job prospects.

However, the response rate was not lower than is typical for surveys conducted in organizations (Baruch & Holtom, 2008). Moreover, women and older employees typically participate in surveys more often in Finland (Lehto & Sutela, 2008). In addition, no significant attrition was detected in our main construct (i.e., PE) and in only one of the well-being outcome variables (i.e., job satisfaction). It is also noteworthy that the longitudinal response rates of our sample (i.e., among those who answered after Time 1) were high and altogether the sample size was large (n = 926). Nevertheless, future studies could apply a person-centered approach in samples with less educated employees and in times of better economic climate to cross-validate our results.

Second, common method variance or respondents' answering styles may have caused bias in the effects because our data were based on self-reports. Though, we consider this risk to be small because this bias should be evident in all relations and not just in some of them. Furthermore, Spector (2006) has argued that common method variance does not automatically inflate associations measured with self-report measures. Future research could still provide new insights by including more measures rated by others than the respondents themselves.

Third, we used a time lag of one year, which however is debatable (see Zapf, Dormann, & Frese, 1996), although used in earlier PE studies (Berntson & Marklund, 2007; Berntson et al., 2008). It is possible that studies with shorter or longer time lags might shed more light on the relationship between PE and well-being.

Conclusions

Despite these potential limitations, our study contributes to the literature in a number of ways. First, we applied a person-centered approach to the concept of PE, thus accounting for both the level of PE and changes in PE. Second, we used three measurement points, which allowed us to probe also nonlinear relationships. Third, we related the PE trajectories to well-being at work.

In conclusion, from a theoretical perspective this study showed that PE is a personal resource, as understood in COR theory (Hobfoll, 2001; Hobfoll et al., 2003). However, change in PE may not lead to immediate or major changes in employee well-being. From the perspective of HRM practitioners, special attention is needed for employees with continuously low levels of PE: they may feel trapped in their current jobs with no perceived prospects of a new job.

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Kaisa Kirves

University of Tampere
School of Social Sciences and Humanities
Kalevantie 5
Tampere, 33014
Finland
Tel. +358 4 0724-5772
E-mail kaisa.kirves@uta.fi

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ORIGINAL ARTICLE

Perceived job insecurity and perceived employability in relation to temporary and permanent workers' psychological symptoms: a two samples study

Kaisa Kirves · Nele De Cuyper · Ulla Kinnunen · Jouko Nätti

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Abstract
Purpose To clarify the role of perceived job insecurity and perceived employability in relation to psychological symptoms among permanent and temporary employees in two samples. Sample 1 was representative of the Finnish working population in 2008 (n = 4,330; Study 1). Sample 2 was collected among Finnish university personnel and in two waves (n = 1,212; Study 2).
Methods Perceived job insecurity, perceived employability, and psychological symptoms were measured by questionnaires in both studies. Hypotheses were tested with regression analyses.
Results The pattern of results was similar in the two samples. Perceived job insecurity was positively associated with psychological symptoms among permanent workers but not among temporary workers. No such differential relationships were observed for perceived employability, instead perceived employability was negatively associated with psychological symptoms among all respondents. Furthermore, perceived employability did not buffer the positive relation between perceived job insecurity and psychological symptoms.
Conclusions Knowledge about the relationship between contract type and workers' well-being can be enhanced when the combined effects of contract type and job conditions are accounted for.

Keywords Perceived employability · Perceived job insecurity · Temporary employment · Psychological symptoms · Longitudinal design

K. Kirves (✉) · U. Kinnunen
Department of Psychology, University of Tampere,
33014 Tampere, Finland
e-mail: kaisa.kirves@uta.fi

N. De Cuyper
Research Group Work, Organizational and Personnel Psychology,
Katholieke Universiteit Leuven, Leuven, Belgium

J. Nätti
Department of Social Research, University of Tampere,
Tampere, Finland

Introduction

Research on temporary employment (i.e., employment of limited duration) has increased rapidly in recent years. A concept with particular appeal in the context of research on temporary work is perceived job insecurity, namely an employee's perception about potential involuntary job loss (Sverke et al. 2002). This is due to the evidence that temporary employment is likely to generate perceived job insecurity (Bernhard-Oettel et al. 2005; De Witte and Näswall 2003; Parker et al. 2002), even to the extent that temporary employment is sometimes portrayed as an objective form of job insecurity, with perceived job insecurity being by definition highly subjective (De Witte and Näswall 2003).

Perceived job insecurity is thought to lead to reduced well-being, as is demonstrated in many studies (for meta-analyses, see Cheng and Chan 2008; Sverke et al. 2002). The reason is that job insecure workers anticipate the frustration of important manifest (e.g., income) and latent needs (e.g., social contacts, structure, and personal development), as advanced in Jahoda's latent deprivation model (Jahoda 1982). Anticipation of a stressful event represents at least an equally important source of anxiety and ultimately reduced well-being than the actual event (Lazarus and

Folkman 1984). That is to say, the perception of potential involuntary job loss (i.e., perceived job insecurity) may have as detrimental consequences as job loss itself (Dekker and Schaufeli 1995; Latack and Dozier 1986).

Nevertheless, perceived job insecurity does not seem to lead to poor well-being among temporary workers: on the contrary, perceived job insecurity is related to strain among permanent workers, but not or less so among temporary workers (Bernhard-Oettel et al. 2005; De Cuyper and De Witte 2006, 2007a; De Cuyper et al. 2009a, 2010; De Witte and Näswall 2003; Mauno et al. 2005). One explanation lies in psychological contract theory. The psychological contract refers to employees' perceptions of reciprocal expectations and obligations implied in the employment relationship (Guest 2004; Rousseau 1995). Temporary and permanent workers are thought to hold a different pattern of psychological contract expectations; in particular, permanent workers are more likely than temporary workers to hold so-called relational psychological contracts, with expectations that are focused on the long-term, socio-emotional exchange and intrinsic job features. In contrast, transactional psychological contracts with short-term and mostly economic exchanges are dominant among temporary workers (Millward and Brewerton 2000).

The implication is that permanent workers in particular expect their employer to provide them with a relatively secure job while temporary workers accept insecurity as part of their contract and everyday work situation (De Cuyper and De Witte 2006, 2007a). Perceived job insecurity then represents a violation of the expectations of permanent workers, but not of the expectations of temporary workers, so that permanent but not temporary workers feel a sense of betrayal on the part of the employer. The result of the betrayal is that perceived job insecurity may associate with reduced well-being among permanent workers, but not among temporary workers.

While perceived job insecurity can be seen as a relevant stressor in the contemporary labor market, perceived employability is potentially useful as a coping mechanism vis-à-vis insecurity either in the form of temporary employment (De Cuyper and De Witte 2007b) or perceived job insecurity (Silla et al. 2009). Perceived employability concerns the employee's perception about his or her chances of landing a new job (Berntson and Marklund 2007) or the employee's belief about how easy it would be to find new employment (Rothwell and Arnold 2007). Perceived employability enhances feelings of being in control over one's career (Fugate et al. 2004), which is highly desirable particularly in times of insecurity. Some authors even conceive perceived employability as an alternative form of security (Forrier and Sels 2003a), next to job security. Control or security are likely to positively affect the employee's experience of work and well-being (De Cuyper and De Witte 2007b; Fugate et al. 2004; Marler et al. 2002).

A plausible assumption given that perceived employability is particularly desirable in times of insecurity is that perceived employability is more important to temporary workers than to permanent workers. One reason is that temporary workers may see perceived employability as a coping resource vis-à-vis their precarious labor market position (Berntson and Marklund 2007). Another reason ties in with the psychological contract perspective advanced by De Cuyper and De Witte (2007b). Temporary workers know that they may, at some point, lose their current job. In exchange for the insecurity that is inherent to their position, they may expect their employer to provide them with training and possibilities to learn new skills. Thus, they may see temporary employment as a route for skill improvement. All these are aspects that lead to employability enhancement. Permanent workers, in contrast, may not focus as much on issues related to improving their position in the external labor market. Low perceived employability, then, is likely to represent a psychological contract breach for temporary workers but not for permanent workers. This, in turn, may result in unfavorable outcomes particularly among temporary workers who perceive to be less employable as compared with temporary workers who feel highly employable. The relationship between perceived employability and well-being is likely less pronounced among permanent workers.

Empirical evidence testing this idea is scarce, possibly because perceived employability in relation to employees' well-being has only recently attracted researchers' attention (Berntson and Marklund 2007; Berntson et al. 2006; De Cuyper et al. 2008). In fact, only De Cuyper et al. (2010, 2011) have tested the interaction between contract type and perceived employability in relation to workers' well-being (i.e., job satisfaction and self-rated health status). However, they established that perceived employability was positively related to well-being among both permanent and temporary employees. Thus, perceived employability as a coping mechanism for temporary workers calls for more attention.

In much the same way, perceived employability may also help employees to cope with perceived job insecurity. It has been suggested and in fact demonstrated that perceived employability, due to the feeling of being in control, may reduce the unfavorable consequences associated with perceived job insecurity, so that perceived employability works as a buffer (Cheng and Chan 2008; Sverke et al. 2002). The relationship between perceived job insecurity and well-being is expected to be less negative when employees perceive their future employment prospects to be favorable rather than unfavorable. Earlier studies have supported the assumed interaction between perceived job

insecurity and perceived employability, for example in relation to life satisfaction (Silla et al. 2009), exit, voice and loyalty (Berntson et al. 2010), and affective commitment to change (Kalyal et al. 2010).

Added to this, contract type may alter the relationship between perceived job insecurity and perceived employability (i.e., three-way interaction) with respect to well-being. It may be that those temporary workers who perceive high insecurity and low employability would show the poorest well-being, because they are lacking two important coping resources (security and employability). This harmful combination, in turn, may be more detrimental for temporary workers due to their precarious position in the labor market compared with permanent workers. However, it is worth mentioning that studies testing this kind of three-way interaction are still lacking.

Particularly the topic of perceived job insecurity in the context of temporary employment has received a great deal of research attention in recent years, whereas perceived employability has so far gained only minor research attention. In addition, the earlier studies in this research field have had number of shortcomings. First, although earlier studies have addressed diverse work settings and occupations, studies that are representative for a specific population are lacking. Second, the design of all earlier studies has been cross-sectional, which could be criticized, for example, because of the risks associated with common method variance owing to data collection at one point in time.

In response to these shortcomings, our main aim is to investigate perceived job insecurity and perceived employability in relation to psychological symptoms among temporary and permanent workers in two separate samples: a representative sample of the Finnish workforce ($n = 4{,}330$; Study 1), and a one-year longitudinal sample of university workers ($n = 1{,}212$; Study 2). Well-being and health—the outcomes examined in our study—fall under the heading of long-term consequences associated with perceived job insecurity (Sverke et al. 2002). While this suggests that the time lag between measures should be substantial, it is nevertheless very difficult to theoretically define an optimal follow-up period within which, for example, the negative outcomes of high perceived job insecurity and low perceived employability should emerge (see de Lange et al. 2004); earlier studies have used time lags from 1 year (e.g., Hellgren and Sverke 2003) up to 7 years (Kivimäki et al. 2001). Consequently, we consider the one-year time lag sufficient to reveal meaningful variation in the outcomes studied.

In sum, we hypothesize that (1) the positive relationship between perceived job insecurity and psychological symptoms is stronger in permanent than in temporary workers (H1), (2) the negative relationship between perceived employability and psychological symptoms is stronger in temporary than in permanent workers (H2), (3) the positive relationship between perceived job insecurity and psychological symptoms is stronger among those with low perceived employability compared with those high in employability (H3), and 4) temporary workers who perceive high job insecurity and low employability show the highest psychological symptoms (H4).

Method

Data collection

For *Study 1*, we used data from the Quality of Work Life Survey from Statistics Finland (see Lehto and Sutela 2008). This survey is representative of the Finnish working population in 2008. Statistics Finland conducted the survey on a face-to-face interview basis using a standard questionnaire. The interviews were carried out in March–May 2008. As potential respondents 6,499 employees were contacted, of whom 4,392 participated in the interviews (response rate 67.6%). After listwise deletion, the effective sample size equaled 4,330 respondents.

The data used in *Study 2* were collected in two Finnish universities in the autumn of 2008 (Time 1) and 1 year later in the autumn of 2009 (Time 2). Universities were selected because they employ a lot of temporary employees (in the participating universities 53% of the personnel was employed on a temporary basis). At Time 1, we invited all employees working at least 20 h per week ($N = 4{,}508$) to fill out an electronic questionnaire. Altogether, 2,137 employees complied with our invitation, yielding a response rate of 47.4%. This sample represented the whole university staff well in terms of employee groups (i.e., teachers, researchers, administrative staff), but women (66% vs. 61%, $p < 0.001$) as well as temporary workers (57% vs. 53%, $p < 0.001$) were overrepresented among the participants.

At Time 2, an invitation message for the follow-up questionnaire was sent to those who participated at Time 1 and were still working in the same university ($N = 2{,}020$). The follow-up questionnaire was completed by 1,314 employees. The response rate relative to Time 1 was 65.0% and over time 29.1%. Of these, we selected those respondents who had either a temporary or a permanent contract at both Time 1 and Time 2. Hence, those respondents who transitioned from temporary to permanent employment ($n = 51$) or from permanent to temporary employment ($n = 21$) were excluded from the analyses. This was done in order to control for the possibility that transitions might affect workers' well-being (De Cuyper et al. 2009b). After listwise deletion, the effective sample size was 1,212 respondents.

Table 1 Characteristics of the participants by contract type in Studies 1 and 2

	Study 1				Study 2			
	Total $n = 4,330$	Permanent $n = 3,803$	Temporary $n = 527$	t/χ^2	Total $n = 1,212$	Permanent $n = 569$	Temporary $n = 643$	t/χ^2
Age *M* (SD)	42.15 (11.78)	43.17 (11.40)	34.82 (11.86)	$t(4,328) = 15.68$**	43.26 (10.76)	49.91 (8.20)	37.38 (9.23)	$t(1,210) = 24.87$**
Gender *N* (%)								
Females	2,351 (54.3)	1,980 (52.1)	371 (70.4)	$\chi^2(1) = 62.70$**	819 (67.6)	377 (66.3)	442 (68.7)	$\chi^2(1) = 0.85$
Males	1,979 (45.7)	1,823 (47.9)	156 (29.6)		393 (32.4)	192 (33.7)	201 (31.3)	
Having a partner *N* (%)								
No	1,167 (27.0)	967 (25.4)	200 (38.0)	$\chi^2(1) = 36.87$**	237 (19.6)	111 (19.5)	126 (19.6)	$\chi^2(1) = 0.00$
Yes	3,163 (73.0)	2,836 (74.6)	327 (92.0)		975 (80.4)	458 (80.5)	517 (80.4)	
Full-time work *N* (%)								
No	459 (10.6)	358 (9.4)	101 (19.2)	$\chi^2(1) = 46.44$**	58 (4.8)	22 (3.9)	36 (5.6)	$\chi^2(1) = 1.99$
Yes	3,871 (89.4)	3,445 (90.6)	426 (80.8)		1,154 (95.2)	547 (96.1)	607 (94.4)	
Education (Study 1) *N* (%)								
Under master's level	3,803 (87.8)	3,355 (88.2)	448 (85.0)	$\chi^2(1) = 4.46$*	–	–	–	
At least master's level	527 (12.2)	448 (11.8)	79 (15.0)		–	–	–	
Education (Study 2) *N* (%)								
Under licentiate/doctor	–	–	–		832 (68.6)	379 (66.6)	453 (70.5)	$\chi^2(1) = 2.07$
Licentiate/doctor	–	–	–		380 (31.4)	190 (33.4)	190 (29.5)	

Cells are left open when not applicable

* $p < 0.05$; ** $p < 0.001$

Respondents and attrition analysis

The characteristics of the samples are shown in Table 1. Of the 4,330 respondents in *Study 1*, 3,803 (87.7%) were permanent workers and 527 (12.2%) temporary workers, in line with population figures. The sample included 54.3% women, the average age being 42 years (SD = 11.8). Almost three out of four participants had a partner (73.0%), 89.4% worked full-time, and 24.2% had higher than high school education. The temporary and permanent workers differed on all these variables. Specifically, temporary workers were younger, were more often women, were less likely to have a partner, worked more often part-time, and had more often higher education in term of master's, licentiate's, and doctoral degrees studies.

Of the 1,212 respondents in *Study 2*, 596 (46.9%) were permanent workers, and 643 (53.1%) were temporary workers at both measurement times. Of the sample, 67.6% were women, the average age was 43 years (SD = 10.8), 80.4% had a partner, 95.2% worked full-time, and 31.4% had a higher than MA level education. Temporary workers were on average 12 years younger than permanent workers, but no other significant differences were found.

Sample attrition analyses in *Study 2* revealed that the follow-up participants ($n = 1,212$) were older ($M = 43.26$ vs. 42.12; $t(2,026) = -2.29$, $p = 0.022$), more likely women (67.6% vs. 62.7%; $\chi^2(1, N = 2,035) = 5.17$, $p = 0.023$), full-time workers (95.2% vs. 91.6%; $\chi^2(1, N = 2,035) = 10.85$, $p = 0.001$), and permanent workers (46.9% vs. 37.3%; $\chi^2(1, N = 2,035) = 18.60$, $p < 0.001$) than those who dropped out ($n = 823$). There were no differences in having a partner ($\chi^2(1, N = 2,035) = 0.02$, $p = 0.889$), education ($\chi^2(1, N = 2,035) = 0.00$, $p = 0.998$), perceived job insecurity ($t(2,033) = 1.63$, $p = 0.103$), perceived employability ($t(2,033) = 0.66$, $p = 0.510$), or psychological symptoms ($t(2,022) = -1.37$, $p = 0.171$) between drop outs and follow-up participants. Note that the proportion of temporary workers (53%) was at this point exactly the same as in the university population.

Measures

Perceived job insecurity

In *Study 1*, perceived job insecurity was measured by asking respondents whether they considered threat of dismissal

an important insecurity factor in their work (0 = no, i.e., low perceived job insecurity; 1 = yes, i.e., high perceived job insecurity). Similar single item measures have been successfully used (i.e., differences between groups have been found despite restricted variance) in other studies (Arnold and Feldman 1982; Borg and Elizur 1992; Davy et al. 1991; Mohr 2000).

In *Study 2*, perceived job insecurity was measured at Time 1 with four items developed by De Witte (2000), such as "I fear I will lose my job" (1 = totally disagree, 7 = totally agree). The Cronbach's alpha was 0.92.

Perceived employability

In *Study 1*, one item was used to measure perceived employability, namely "What do you think would be the likelihood of your finding a new job?" (0 = poor, i.e., low perceived employability; 1 = reasonable to good, i.e., high perceived employability). A similar single item measure was used successfully in the study by De Cuyper et al. (2010).

In *Study 2*, perceived employability was assessed at Time 1 with four items adapted from Berntson and Marklund (2007) and Griffeth et al. (2005). Respondents were asked to rate items such as "Given my qualifications and experience, getting a new job would not be very hard at all" on a scale from 1 (totally disagree) to 7 (totally agree). The Cronbach's alpha was 0.85. Debates on how to measure employability are still ongoing (Forrier and Sels 2003b). We feel confident that these two types of measures capture the commonalities of this debate; namely, employability relates to one's own perception of possibilities of getting a new job.

Contract type

Contract type was effect coded with −1 for permanent workers and +1 for temporary workers in both studies. Effect coding was selected based on recommendations by Frazier et al. (2004).

Psychological symptoms

Psychological symptoms (Lehto and Sutela 2008) were measured at both Time 1 and Time 2 in *Study 2*. The exact same measure was used in *Study 1*. Respondents were asked to rate six symptoms (fatigue, apathy or lack of energy; difficulties in falling asleep or recurrent awakenings at night; depression; over-exhaustion; tenseness, nervousness, or irritability; feeling that it is "all just too much") based on how frequently they had recently suffered from these on a scale from 1 (never) to 6 (daily or almost daily). The Cronbach's alphas were 0.82 for Study 1 and 0.88 for Study 2 at both Times 1 and 2.

Control variables

The following variables were introduced as control variables and effect coded in all analyses: age (in years), gender (−1 = female, 1 = male), having a partner (−1 = no, 1 = yes), full-time worker (−1 = no, 1 = yes), education (Study 1: −1 = under master's level, 1 = at least master's level; Study 2: −1 = under licentiate/doctoral level, 1 = licentiate/doctoral level).

Statistical analyses

In both studies, hypotheses were tested with moderated multiple regression analysis, following the recommendations by Baron and Kenny (1986). Psychological symptoms were regressed on the following variables: demographic variables (i.e., age, gender, having a partner, full-time work, and education) in step 1, perceived job insecurity and perceived employability in step 2, and contract type in step 3. In step 4, we entered the two-way interaction terms namely Contract type × Perceived job insecurity, Contract type × Perceived Employability, and Perceived Employability × Perceived job insecurity. In step 5, the three-way interaction term, namely Contract type × Perceived Employability × Perceived job insecurity, was introduced. All interaction terms were created with the cross-product of the variables. Following the recommendations by Frazier et al. (2004), continuous predictor variables were standardized before cross-products were calculated in order to avoid artificial multicollinearity. In Study 2, we entered in the last step psychological symptoms measured at Time 1 to control for its effect. This order of entering the predictors provides the possibility to inspect relationships with and without controlling for baseline symptoms, each with relative merits (see e.g., De Cuyper et al. 2011). Significant interactions were plotted as recommended by Frazier et al. (2004): we computed predicted psychological symptoms for one standard deviation below and above the mean, and separately for temporary and permanent workers. We also performed a simple slope analysis.

Results

Descriptive results

Table 2 shows the means, standard deviations, and correlations between scales in both samples. In *Study 1*, temporary employment was positively related to perceived job insecurity and perceived employability, but not to psychological symptoms. Moreover, perceived job insecurity and perceived employability were not related, but perceived job insecurity correlated positively and perceived employability negatively with psychological symptoms.

Table 2 Means, standard deviations, and correlations of the study variables in Study 1 (above the diagonal) and Study 2 (under the diagonal)

	Study 1 (n = 4,330)		Study 2 (n = 1,212)		1	2	3	4	5	6	7	8	9	10
	M	SD	*M*	SD										
1. Contract type					–	0.11***	0.11***	–0.00		–0.23***	–0.12***	–0.09***	–0.10***	0.03*
2. Perceived job insecurity	0.13	0.33	3.27	1.70	0.42***	–	–0.02	0.10***		–0.02	0.02	0.03	–0.02	–0.05**
3. Perceived employability	0.77	0.42	4.28	1.30	0.03	–0.29***	–	–0.07***		–0.45***	0.09***	–0.02	0.01	0.07***
4. Symptoms T1	2.44	0.87	2.88	1.02	0.08***	0.22***	–0.19***	–		–0.01	–0.15***	–0.06***	–0.01	0.05**
5. Symptoms T2			2.85	0.99	0.10***	0.19***	–0.17***	0.76***	–					
6. Age	42.15	11.78	43.26	10.76	–0.58***	–0.23***	–0.04	–0.09**	–0.10***	–	–0.05***	0.17***	0.08***	0.03
7. Gender					–0.03	–0.06	0.13***	–0.04	–0.04	0.03	–	0.00	0.17***	0.00
8. Having a partner					–0.00	–0.04	0.07*	–0.07*	–0.03	0.01	0.05	–	0.05**	0.04**
9. Full-time work					–0.04	–0.03	0.06	–0.07*	–0.08**	–0.02	0.06*	0.03	–	0.06***
10. Education					–0.04	–0.11***	0.13***	0.03	–0.01	0.23***	0.19***	0.09**	0.06*	–

Contract −1 = permanent, 1 = temporary; Job insecurity (Study 1): −1 = low job insecurity, 1 = high job insecurity; Employability (Study 1): −1 = poor, 1 = good to reasonable; Age in years; Gender: −1 = female, 1 = male; Having a partner: −1 = no, 1 = yes; Full-time work: −1 = no, 1 = yes; Education, Study 1: −1 = under master's level, 1 = at least master's level; Study 2: −1 = under licentiate/doctoral level, 1 = licentiate/doctoral level, Cells are left open when not applicable

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

In *Study 2*, temporary employment was positively associated with perceived job insecurity and psychological symptoms at Time 1 and at Time 2. No association was found between contract type and perceived employability. Perceived job insecurity and perceived employability were negatively related and both correlated with psychological symptoms in the same way as in Study 1.

Test of hypotheses

Study 1

The results of the moderated regression analysis for Study 1 are shown in Table 3 (the left side). From Table 3, we can see that perceived job insecurity was positively and perceived employability negatively associated with psychological symptoms. In addition, contract type was significantly related to psychological symptoms; permanent workers seemed to have a higher level of symptoms. Of the three two-way and one three-way interactions, only the interaction term between contract type and perceived job insecurity was significant. Figure 1 and the simple slope analysis showed that the relationship between perceived job insecurity and psychological symptoms was stronger among permanent ($b = 0.12$, $p < 0.001$) than among temporary ($b = 0.05$, $p = 0.177$) workers.

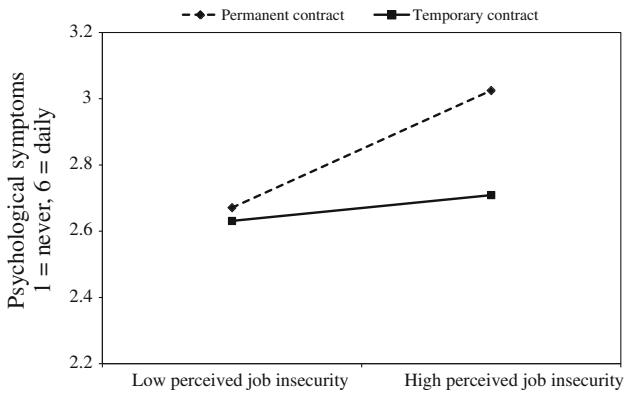

Fig. 1 Interaction between perceived job insecurity and contract type for psychological symptoms in Study 1

Study 2

The results of the regression analysis for Study 2 are shown in Table 3 (the right side). The first model does not control for the baseline measure, while the second model does. Table 3 shows that perceived job insecurity was positively and perceived employability negatively associated with psychological symptoms at Time 2, but contract type was no longer significantly related to psychological symptoms at Time 2. From the steps which introduced two-way and three-way interactions, respectively, only the interaction term between contract type and perceived job insecurity was significant. This interaction remained significant after introducing psychological symptoms at Time 1 (step 6). Figure 2 and the simple slope analysis showed that the relationship between perceived job insecurity and psychological symptoms was, as in Study 1, stronger among permanent ($b = 0.27$, $p < 0.001$) than among temporary ($b = 0.12$, $p = 0.002$) workers.

Table 3 Results of hierarchical regression analyses

	Study 1 (n = 4,330) Psychological symptoms			Study 2 (n = 1,212) Psychological symptoms T2			
	β	95% CI		β	95% CI		β
Step 1							
Age	−0.05**	−0.07	−0.03	−0.09*	−0.12	−0.05	−0.01
Gender	−0.15***	−0.17	−0.14	−0.02	−0.05	0.01	0.00
Having a partner	−0.06***	−0.08	−0.05	−0.02	−0.05	0.01	0.02
Full-time work	0.02	0.00	0.03	−0.07**	−0.10	−0.05	−0.02
Education	0.06***	0.05	0.08	0.06*	0.03	0.09	−0.02
ΔR^2	0.03***			0.02***			0.02***
Step 2							
Perceived job insecurity	0.08**	0.06	0.11	0.15***	0.12	0.19	0.01
Perceived employability	−0.09**	−0.12	−0.06	−0.13***	−0.16	−0.09	−0.02
ΔR^2	0.02***			0.04***			0.04***
Step 3							
Contract	−0.07*	−0.09	−0.04	−0.01	−0.05	0.03	0.02
ΔR^2	0.00**[a]			0.00			0.00
Step 4							
Contract × Perceived job insecurity	−0.06*	−0.09	−0.03	−0.08*	−0.11	−0.05	−0.05*
Contract × Perceived employability	0.02	−0.02	0.06	−0.04	−0.07	−0.01	−0.03
Perceived employability × Perceived job insecurity	0.01	−0.03	0.05	0.00	−0.03	0.03	0.00
ΔR^2	0.00			0.01			0.01
Step 5							
Contract × Perceived employability × Perceived job insecurity	0.05	0.01	0.09	0.00	−0.03	0.03	−0.00
ΔR^2	0.00			0.00			0.00
Step 6							
Psychological symptoms T1							0.75***
ΔR^2							0.51***
R^2	0.05***			0.07***			0.58***

β standardized beta-coefficient from the final step, *95% CI* 95% Confidence interval for beta-coefficients, ΔR^2 change in explanation rate in each step, R^2 explanation rate

Contract −1 = permanent, 1 = temporary; Job insecurity (Study 1): −1 = low job insecurity, 1 = high job insecurity; Employability (Study 1): −1 = poor, 1 = good to reasonable; Age in years; Gender: −1 = female, 1 = male; Having a partner: −1 = no, 1 = yes; Full-time work: − 1 = no, 1 = yes; Education, Study 1: −1 = under master's level, 1 = at least master's level; Study 2: −1 = under licentiate/doctoral level, 1 = licentiate/doctoral level, Cells are left open when not applicable

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

[a] With three decimals $\Delta R^2 = 0.002$**

We also calculated 95% confidence intervals for standardized regression coefficients [$\beta \pm (\beta/t)$] in order to statistically compare the coefficients of step 5 in Study 1 and 2. Only the confidence intervals of gender, full-time work, and perceived job insecurity did not overlap which implies that all the other coefficients can be seen as equal (see Table 3). However, as we were not able to use the same measures in the two studies, this kind of testing can be treated with certain caution.

Discussion

Summary of results

Our overall aim was to investigate perceived job insecurity and perceived employability in relation to psychological symptoms, also accounting for contract type as a moderator. We analyzed two different datasets: a representative sample of the Finnish workforce (Study 1) and a longitudinal sample

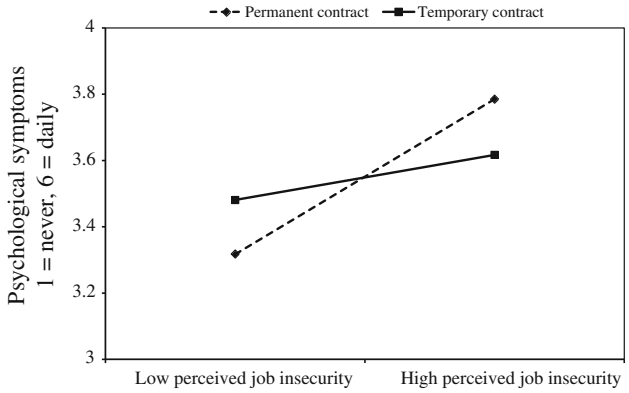

Fig. 2 Interaction between perceived job insecurity and contract type for psychological symptoms at Time 2 in Study 2

of Finnish university workers (Study 2). Even though there were differences in sampling, measures, and in the patterns of correlations in Studies 1 and 2, the results regarding the interaction between contract type and perceived job insecurity were strikingly similar. This suggests that such interactions are fairly robust across different occupational groups and time in Finland.

In line with our Hypothesis 1, the interaction between perceived job insecurity and contract type in relation to psychological symptoms was supported in both studies. The results showed that the positive relationship between perceived job insecurity and psychological symptoms was stronger among permanent than among temporary workers. This pattern of results corroborated our argument based on psychological contract theory (Guest 2004; Rousseau 1995) that permanent workers, specifically, expect their employers to provide job security, and loss of job security is then seen as a betrayal which is followed by impaired well-being. This finding concurs with those of other studies (Bernhard-Oettel et al. 2005; De Cuyper and De Witte 2006, 2007a; De Cuyper et al. 2009a, 2010; De Witte and Näswall 2003; Mauno et al. 2005). In addition, the result from Study 2 also indicates that for permanent workers, perceived job insecurity is associated negatively with psychological health even after 1 year.

By way of contrast, Hypothesis 2 was not supported: in both studies, the interaction term between perceived employability and contract type did not explain variance in psychological symptoms. Similar non-significant relationships have been reported by De Cuyper et al. (2010). Hypothesis 3 about perceived employability as a buffer against high perceived job insecurity was not supported, either. Thus, it seems that perceived employability buffers only against attitudinal outcomes, but perhaps not against health and well-being. All earlier studies that supported the interaction between perceived job insecurity and perceived employability have examined more proximal and malleable outcomes, such as attitudes (Berntson et al. 2010; Kalyal et al. 2010; Silla et al. 2009), whereas our study focused upon health, which is distal and less malleable.

What we found was that perceived employability was negatively associated with psychological symptoms among all workers in both studies. Perceived employability may be a coping resource for all workers (De Cuyper and De Witte 2007b; Lazarus and Folkman 1984). This also concurs with studies reported by Berntson and Marklund (2007), De Cuyper et al. (2008), and De Cuyper et al. (2010). Considering that in the contemporary labor market insecurity, though in different forms, is omnipresent and a threat to all (Sverke et al. 2002), it would be plausible to argue that perceived employability is important to all employees as a personal resource.

We did not find support for our hypothesis that temporary workers who perceive high job insecurity and low employability would show the highest psychological symptoms: the three-way interaction (Contract × Perceived employability × Perceived job insecurity) was not significant. Therefore, lacking two important resources (security and employability) was not a harmful combination in terms of psychological health among temporary workers. This may be related to their counterbalancing effects among both temporary and permanent workers.

Some caution is warranted in interpreting age, education, and contract type in relation to psychological symptoms because these variables acted differently in the bivariate correlations compared with the regression analyses. These inconsistent findings are related to the multivariate analyses in which many variables are treated simultaneously. In Study 1, associations between both age and contract type in relation to psychological symptoms in the regression model seem to be artificial. Because age correlated reasonably highly with contract type ($r = -0.23$, Table 2) and with perceived employability ($r = -0.45$, Table 2), it is possible that this complex interrelationship caused the significant regression coefficients. In the same way in Study 2, educational level and contract type were probably artificially related to psychological symptoms since age correlated strongly with contract type ($r = -0.58$, Table 2) and with education ($r = 0.23$, Table 2). Note, however, that perceived job insecurity and perceived employability—which were the core variables—acted as expected in the analysis.

Although the proportion of temporary workers differed in the two samples (12% in Study 1 and 53% in Study 2) those figures were in line with population figures. In this sense, the results obtained can be generalized to these populations. Furthermore, we sampled different profiles of temporary workers in terms of demographic factors in the two studies. Within the Finnish workforce (Study 1), temporary workers are more often younger, women, part-time workers, not living in a relationship, and have a higher education. In contrast, in universities (Study 2) the differences

between temporary and permanent workers are much smaller due to the extensive use of temporary contracts. Despite these structural differences, the pattern of results was similar in the two studies.

In addition, the differences in measures of perceived job insecurity and perceived employability between Study 1 and Study 2 could have been a reason also for differences in the main results. However, the main results did not differ which led us to conclude that the use of different measures increases the external validity of our findings.

Limitations and strengths

As with all research, there are limitations in our study that should be conceded. First, fixed-term workers dominate both samples of temporary workers. Though this reflects the situation prevailing in Finland, we should be careful in generalizing results to fields and countries with a relatively high share of other types of temporary contracts (e.g., on-call workers, temporary agency workers, day contractors). Also, contract preferences may play a role in temporary workers' responses, which we did not take into account. However, it has been estimated that a majority (about 70%) of Finnish employees work in temporary employment involuntarily (Sutela et al. 2001), and our own studies suggest that this figure might be even higher among university staff (Kirves et al. 2010). Nevertheless, future research might well take into account the heterogeneity of the temporary workforce (see e.g., the study by Bernhard-Oettel et al. 2005).

Second, while the sample of Study 1 was representative of the whole Finnish workforce, it was cross-sectional, which clearly limits the conclusions based on its results. On the other hand, the sample of Study 2 was restricted to the university environment but was longitudinal in nature. Taking these two samples together with largely the same results, we can, with reasonable confidence, generalize the results of this study to the Finnish workforce. To the best of our knowledge, this is the first study to show that the negative effects of perceived job insecurity on well-being among permanent but not among temporary workers were seen 1 year later since the measurement of perceived job insecurity.

Third, both our datasets were based on self-reports, which may increase the risk of inflated relationships owing to common method variance. However, common method variance is likely to attenuate rather than to inflate interactions (Evans 1985).

Fourth, the percentage of variance explained by the independent variables was quite modest, especially when the interactions were concerned. Still, similar results have been found in previous research addressing the stressor-strain relationship (Zapf et al. 1996). The multicausal nature of the stressor-strain relationship is well known, and hence, the impact of a single work stressor is expected to be weak. Our study also measures overall perceived job insecurity and perceived employability using a small number of items, which may restrict the sample variation, resulting in a small percentage of explained variance.

Finally, also the healthy worker effect (Virtanen et al. 2005) might account for the findings in Study 2. It might be that particularly temporary workers with good health are offered another contract when the previous contract expires while temporary workers with poorer health may have dropped out from the second data collection. However, the attrition analysis did not reveal drop outs on the basis of psychological symptoms.

Conclusions and future research

Our study contributed to the existing literature by demonstrating that the relationship between perceived job insecurity and psychological symptoms was negative for permanent workers, but not for temporary workers. This pattern was found in two samples, a cross-sectional sample that was representative of Finnish workers and a longitudinal sample of Finnish university workers, with partly different measures, which may suggest good prospects for generalizing the findings.

In light of these results, we conclude that in future it would be important to specify the possible buffers against well-being problems among permanent workers feeling insecure in their jobs. Earlier studies have shown that organizational factors (e.g., knowledge about potential changes in the organization) may be helpful in this regard (Probst 2008). Furthermore, research about the determinants of perceived employability should be continued (see e.g., Fugate et al. 2004; Wittekind et al. 2010), since it seems to be an important resource for both temporary and permanent employees. Training and employers' support for career and skill development might be among the factors which contribute to high perceived employability.

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Conflict of interest The authors declare that they have no conflict of interest.

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