Investigating the links between resilience, perceived HRM practices, and retirement intentions

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Abstract

Purpose – Human resource management (HRM) scholars’ interest in older employees’ resilience has only recently started to emerge. Little is known about how resilience and perceived HRM are linked to different retirement intentions. Drawing on the conservation of resources (COR) and social exchange theories, this study investigates the links between perceived HRM practices, resilience, and retirement intentions. Additionally, the paper examines the possible mediating role of resilience in the relationship between perceived HRM practices and retirement intentions.

Design/Methodology/Approach – In 2016, a cross-sectional study was conducted among older (50+) nursing professionals working in a Finnish university hospital. Statistical methods, including mean comparisons and linear and logistic regression analyses, were used to analyze the data.

Findings – The results indicated that resilience partly mediated the relationship between perceived HRM practices and early retirement intentions, and fully mediated the association between perceived HRM practices and intentions to continue working after retirement age.

Originality – This study produces new knowledge regarding the links between resilience, perceived high involvement work practices (HIWPs) and retirement intentions.

Keywords Resilience, HRM, older employees, retirement intentions, healthcare, Finland

Paper type Research paper
**Introduction**

Dynamic and turbulent working environments require resilience not only from individual employees, but also from groups and organizations (Britt *et al.*, 2016; King *et al.*, 2016). Resilience describes an individual’s ability to recover from life’s hardships (Bardoel *et al.*, 2014, p. 280). In a work context, this can mean an individual’s ability to adapt to changes and bear uncertainties (Shin *et al.*, 2012). Organizations, on the other hand, may encounter environmental challenges, terrorist attacks, and financial setbacks (Linnenluecke, 2017, p. 4). One of the current megatrends influencing working life is population aging (Sonnet *et al.*, 2014). In many countries, there is continuing pressure to increase the official retirement age and prevent individuals from exiting working life early (Sonnet *et al.*, 2014). In Finland, the pension reform act enacted at the beginning of 2017 aims to gradually increase the retirement age of employees due to increasing life expectancy (https://www.tyoelake.fi/en/).

**Context of the study**

Evidence indicates that older employees continue to work longer in many countries (Pensions at a Glance 2017). In Finland, more employees than ever are considering working after the official retirement age (Tenhunen, 2017). However, the increasing official retirement age, together with challenges faced in working and private life, can be burdensome (Brandan *et al.*, 2013/2014). In working life, age discrimination can negatively influence older employees’ willingness to continue working, “pushing” them into early retirement (Bayl-Smith and Griffin, 2014, p. 589), as can changing work demands (Sterns and Dawson, 2012). Adversities faced outside working life may include illness or injury (Sterns and Dawson, 2012) or the death of a loved one (Smith and Hayslip Jr., 2012). Resilience is an important attribute that enables individuals to cope with adversities (Britt *et al.*, 2016), including uncertainties related to contemporary careers (Lyons *et al.*, 2015) and the current turbulent working environment.
Bardoel et al., 2014; Luthans et al., 2006). Consequently, it can be posited that resilience could enhance older employees’ abilities to cope with the challenges faced in later life (Sterns and Dawson, 2012; Brandan et al., 2013/2014).

Research objectives and expected contribution

The global scarcity of nursing professionals and the growing need for healthcare services because of the greying society highlight the need to retain older nursing professionals in the workforce as long as possible (Armstrong-Stassen et al., 2015). Relying on a resource approach regarding retirement (see Wang, 2007), this study investigates how perceived HRM practices and resilience, as organizational and individual resources, are associated with different retirement intentions among older (50+) nursing professionals. The contribution of this study is threefold. First, it investigates the linkage between perceived HRM practices and employee resilience, thereby contributing to the HRM field, where studies focusing on employees’ resilience have just started to emerge (Bardoel et al., 2014; Cooke et al., 2016). Second, this study investigates the association of resilience with older employees’ retirement intentions. Although several positive issues are associated with employee resilience, such as emotional stability (Bonanno et al., 2007) and performance (Luthans et al., 2005; see, Luthans et al., 2006), few studies focus on the significance of resilience for older employees’ retirement intentions. Consequently, this study contributes to the growing academic inquiry into the attitudinal and behavioral outcomes of employee resilience (King et al., 2016). Third, this study investigates the possible mediating role of employee resilience in the relationship between perceived HRM practices and retirement intentions. Thus far, only a few HRM studies have investigated this matter (Cooke et al., 2016; Shin et al., 2012).

Concepts of the study
The definitions and operationalizations of resilience vary (Linnenluecke, 2017; Britt et al., 2016). In general, resilience is described as an individual’s ability to “bounce back” under difficult circumstances (Smith and Hayslip Jr., 2012, p. 5). In practice, this may mean an individual’s ability to avoid burnout or depression during an adverse life situation (Chen et al., 2015, p. 96). In other words, resilience describes an individual’s ability to maintain one’s functioning as well as recover from adverse life events (Hardy et al., 2004).

Resilience has two components: psychological and behavioral (Chen et al., 2015). The former refers to mental wellbeing, whereas the latter relates to how an individual functions in adverse situations (Chen et al., 2015). Similarly, Britt et al. (2016, p. 378) distinguish between the capacity and the demonstration of resilience. The former refers to the ability to adapt to adverse situations positively. As an individual-level ability, resilience is a part of an individual’s psychological capital (PsyCap) and is a resource that can be further developed (Britt et al., 2016). For example, personal, familial, community, and organizational factors can provide an individual with resources for resilience (Britt et al., 2016, p. 380). The demonstration of resilience, on the other hand, describes how an individual has been able to adapt to an adverse situation (Britt et al., 2016). The demonstration of resilience has been measured in empirical studies by investigating an individual’s mental health after an adverse event (Britt et al., 2016; Bonanno et al., 2007). Yet, different researchers hold diverse views regarding whether resilience means only the ability to recover from difficult events or if it also refers to positive growth after those events (Britt et al., 2016; Luthans et al., 2006). It is also unclear how an individual’s current level of resilience indicates his or her ability to cope with future challenges and adversities (Britt et al., 2016). The focus of this study is on individual-level resilience, instead of group- or organization-level resilience. Furthermore, resilience is defined as an individual’s response to adverse life situations in line with Hardy et al.’s (2004, p. 260) study.
Broadly speaking, HRM practices cover all the organizational activities aiming to maintain, develop and strengthen the human capital of the organization (Veth et al., 2017, p. 2). In this study, the focus is on so-called high involvement work practices (HIWPs) which are seen to enhance employees’ abilities, motivation, and performance (Kooij et al., 2013), and thereby potentially strengthening individual-level resilience (Cooke et al., 2016) as well as hindering the resource deterioration of older employees (von Bonsdorff et al., 2018).

In terms of retirement intentions, both intentions for early retirement and intentions to continue working after retirement age are investigated in this study. Older employees’ early and late retirement intentions have been investigated in a similar manner, for example, in the study of Topa and Alcover (2015).

**Theoretical framework and hypotheses**

The interest toward resilience is related to the Positive Psychology Movement (Smith and Hayslip Jr., 2012), and the theoretical background of studies concerning employees’ resilience have often relied on the conservation of resources (COR) (Bardoel et al., 2014) and PsyCap theories (Luthans et al., 2006). The first wave of resilience research investigated individual traits associated with resilience, whereas the second wave of resilience studies acknowledged that resilience is more “state-like” and can be developed. Furthermore, recent resilience research has paid attention to the resilience process and how different individual and contextual factors contribute to it (King et al., 2016; Hildon et al., 2008; Luthans et al., 2006).

Early resilience research focused primarily on children and adolescents, and how they survived the adversities they encountered during the early years of their lives (Hildon et al., 2008; King et al., 2016). Recently, gerontologists have begun to pay attention to resilience in older age (Hildon et al., 2008). However, surprisingly little attention has been given to resilience in the workplace, especially in the context of retaining employees (King et al., 2016; Luthans et al.,
2006). Resilience studies focusing on employees’ resilience have been conducted primarily among military personnel because they are likely to encounter adverse situations in their profession (Britt et al., 2016; King et al., 2016). However, Britt et al. (2016, p. 382) argue that resilience studies should also investigate different occupations, especially those of first responders, such as police officers, firefighters, and medical employees. For instance, nursing professionals are likely to face different kinds of adversities due to their occupation, such as patients’ pain and death as well as work overload, role conflicts and aggression (Kossek and Perrigino, 2016, p. 750; Yilmaz, 2017, p. 10).

Recently, resilience has been linked to the discussion of late-career challenges (Brandan et al., 2013/2014). Employees with high work and career resilience are expected to be confident about their future opportunities and their abilities to confront adverse work situations (Hennekam, 2015). For example, Lyons et al.’s (2015) study demonstrated that career resilience was positively related to an individual’s career success. It has been postulated, based on lifespan theories, that an individual’s response to stress factors, such as adverse work situations, may change as individuals age (Mauno et al., 2013, p. 411). Mauno et al.’s (2013) study showed that older employees were more resilient under heavy workloads and during work-family conflicts compared to younger employees. This result indicates that older employees can regulate their feelings better than younger ones (Mauno et al., 2013). It is also possible that older employees learn coping strategies during their careers, allowing them to get through difficult situations (Mauno et al., 2013). However, Mauno et al.’s (2013) study demonstrated that younger employees coped better with job insecurity compared to older employees, partly because they were more confident about finding new jobs compared to older employees.

When it comes to adverse situations, the severity of the events involved has been defined and measured differently in previous studies (Hildon et al., 2008). For example, Britt et al. (2016,
p. 381) argued that common work-related stress factors, such as work overload or job ambiguity, do not necessarily meet the criteria for an adverse situation. Other resilience studies have focused on cumulative adversity (the total number of stressful life events) (e.g., Ezeamama et al., 2016, p. 1007). Ageist practices in the workplace, career plateauing, and uncertainties in the workplace are examples of the adversities older employees may face in working life (Brandan et al., 2013/2014). Similarly, one’s own or a loved one’s sickness or injury and divorce are forms of adversities that older employees may undergo in their private life (Sterns and Dawson, 2012). Hildon et al. (2008) argued that during older age, individuals are likely to face adversities, such as illness, but it does not mean that they cannot maintain a reasonable quality of life. Therefore, they have defined resilience as “flourishing despite adversity” (Hildon et al., 2008, p. 728). This study uses the scale developed by Hardy et al. (2004), focusing on the most stressful forms of adversity (health-related or other) older nursing professionals have encountered during the previous five years.

**Resource perspective on retirement intentions**

This study takes a resource perspective on retirement in investigating how perceived HRM practices and resilience are associated with different forms of retirement intentions (Wang, 2007; Armstrong-Stassen et al., 2012). The resource perspective on retirement relies on the COR theory (Wang, 2007; Armstrong-Stassen et al., 2012). The COR theory has been widely used in the fields of organizational and occupational psychology to investigate individuals’ work-related attitudes and behaviors, including resilience and retirement intentions (Chen et al., 2015; Gorgievski et al., 2011; Wang, 2007; Armstrong-Stassen et al., 2012). Resources are at the center of the COR theory, and, according to this theory, individuals constantly aim to protect and safeguard their resources (Chen et al., 2015). The COR theory implies that individuals require suitable resources to be resilient (Chen et al., 2015). These resources can be
tangible (e.g., a house or car) or other (e.g., marriage, employment, skills, and self-esteem) (Chen et al., 2015, p. 97). Loss of resources can cause a “loss spiral” with negative consequences, whereas gaining resources is likely to foster a “gain spiral,” with positive outcomes (Chen et al., 2015, p. 97).

In the present study, HRM practices are considered resources provided by the employer organization, whereas resilience reflects an individual’s personal resources (Cooke et al., 2016). The social exchange theory, which focuses on the exchange of resources in an employee–organization relationship (Gorgievski et al., 2011), has often been applied to explain the association between HRM practices and an individual’s retirement intentions (Kooij et al., 2013; Armstrong-Stassen et al., 2015). According to this view, HRM practices are likely to enhance an employee’s positive work-related attitudes and behaviors since HRM practices reflect the value an employer places on their employees (Kooij et al., 2013; Alfes et al., 2013; Kuvaas, 2008). For example, the study of Veth et al. (2017) showed that perceived availability and use of HRM practices were positively associated with employability among different aged employees. In line with COR theory and social exchange theory, it can be expected that HRM practices such as HIWPs practices can safeguard older employees from resource deterioration (Kooij et al., 2013; von Bonsdorff et al., 2018) and enhance their abilities to continue working until retirement and beyond.

Conversely, poor working arrangements and working environments are considered antecedents of early retirement (Topa et al., 2018; Dal Bianco et al., 2015). It is unclear whether direct links exist between perceived HRM practices and different forms of withdrawal intentions, such as retirement intentions (Armstrong-Stassen et al., 2015). Some evidence exists indicating that perceived HRM practices are negatively associated with early retirement intentions. For
example, Herrbach et al.’s study (2009) demonstrated that training opportunities were negatively related to early retirement intentions among late-career managers. Thus, this study hypothesizes the following:

Hypothesis 1a: Perceived HIWPs are negatively associated with early retirement intentions.

Hypothesis 1b: Perceived HIWPs are positively associated with intentions to continue working after the official retirement age.

The linkage between HRM and resilience

Recently, academic interest in the relationship between management and resilience (Kossek and Perrigino, 2016) and especially between HRM and resilience has grown (Britt et al., 2016; Cooke et al., 2016; Bardoel et al., 2014; Luthans et al., 2006). In line with the COR theory, a supportive working environment, social networks and HRM practices can be considered work-related resources, which can hinder employees’ work-related strain and reinforce their resilience (Kossek and Perrigino, 2016; Yilmaz, 2017; Cooke et al., 2016). Luthans et al. (2006) argued that, when it comes to improving employee resilience (as well as other forms of positive PsyCap), both proactive and reactive HRM practices should be used. The former refers to resilience training, whereas the latter can mean, for instance, grief counseling (Luthans et al., 2006; see Bardoel et al., 2014, 281). Bardoel et al. (2014, p. 283–284) identified numerous HRM practices important for strengthening employees’ resilience, including 1) the development of social supports at work; 2) work-life balance practices; 3) employee assistance programs; 4) employee development programs (including resilience and mindfulness training); 5) flexible work arrangements, rewards, and benefits systems; 6) occupational health and safety systems; 7) risk and crisis management systems; and 8) diversity management. This study
follows Cooke et al. (2016), focusing on the importance of HIWPs for employee resilience instead of investigating only a few HRM practices. Thus, this study postulates that HIWPs can enhance an individual’s resources (Cooke et al., 2016) and are, therefore, positively associated with employee resilience. Consequently, this study hypothesizes the following:

Hypothesis 2: Perceived HIWPs are positively related to resilience.

The association between resilience and retirement intentions

Several positive, employee-level outcomes are associated with resilience. For example, a positive association between an individual’s resilience and performance has been found (Luthans et al., 2005; see, Luthans et al., 2006, p. 38). Additionally, good self-rated health is positively related to employee resilience (Ezeamama et al., 2016; Hardy et al., 2004). A positive association between resilience and physical activity was found among healthcare and insurance employees (Gerber et al., 2014; see, Thogersen-Ntoumani et al., 2017). Resilience is also positively associated with organizational commitment and negatively with burnout (Meng et al., 2017). Less is known about how resilience relates to employee retention (Luthans et al., 2006, 38) and retirement (Hildon et al., 2008). Hildon et al.’s (2008) study showed that resilient individuals were satisfied with their retirement process and possibilities for gradual retirement, indicating that resilient individuals had more control over their retirement process compared to less resilient ones. In line with the COR theory, this study postulates that older employees who are more resilient are likely to continue working until retirement age and beyond. In other words, resilience can prevent loss of resources or can enable employees to gain more resources (King et al., 2016, p. 784). Thus, this study hypothesizes the following:

Hypothesis 3a: Resilience is negatively associated with early retirement intentions.
Hypothesis 3b: Resilience is positively associated with intentions to continue working after the official retirement age.

Resilience as a mediator

Based on the COR theory, it is likely that HIWPs provided by the organization enhance an individual’s resilience, which, in turn, is positively related to an individual’s intention to continue working until retirement age and beyond (von Bonsdorff et al., 2018). Shin et al. (2012, p. 730), draw on the COR theory, as they argue that the resources provided by the organization are likely to enable employees to cope with work challenges. Similarly, some HRM studies, relying on the social exchange theory, indicate that perceived HRM practices may not directly influence an individual’s behavior (such as retirement intentions); rather, there are possible mediating (or moderating) factors, such as work-related attitudes (Alfes et al., 2013; Kuvaas, 2008). However, the possible mediating role of resilience in the association between perceived HRM practices and retirement intentions has received little attention. For example, Cooke et al.’s (2016) study showed that resilience mediated the relationship between HIWPs and employee engagement. This study hypothesizes the following:

Hypothesis 4a: Resilience mediates the relationship between perceived HIWPs and early retirement intentions.

Hypothesis 4b: Resilience mediates the relationship between perceived HIWPs and intentions to continue working after the official retirement age.
The hypothesized relationships between perceived HIWPs, resilience, and retirement intentions are presented in Figure 1.

Please insert Figure 1 about here.

Methodology

The data for this study were collected as a part of *Work careers of older workers—continued participation and bridge employment*, a study at the Gerontology Research Centre (GEREC) at the University of Jyväskylä, Finland. Total population sampling was used for this study. Total population sampling is a purposive sampling technique in which the whole population, which meets the specific criteria, is studied (Etikan *et al.*, 2016, 3). A survey was targeted to all nursing professionals working at one Finnish university hospital who were 50 years old and older. A total of 962 questionnaires were sent to the relevant nursing professionals via the hospital’s internal post in the spring of 2016. One reminder was sent. In all, 396 questionnaires were returned (41% response rate). The Ethical Committee at the University of Jyväskylä and the studied hospital approved this study. We also obtained informed consent from the participants.

Demographic characteristics

The majority of the respondents were female (90%) (see Table 1), which represents the general distribution of gender in the Finnish healthcare field. In Finland, approximately 87% of social and healthcare workers were female in 2015 (Women and men in Finland 2016, p. 47). For those in the nursing profession, this percentage was 92 in 2014 (Tilastoraportti, 2018). The
mean age of the respondents was 57 (SD 3.7). Most of the respondents had a college level education (78%). Approximately three-quarters of the respondents were married or in a non-marital relationship. Over 90% of the respondents had a permanent job. Half of the respondents worked in shifts. The majority of the respondents worked overtime only occasionally (67%). The average monthly salary was around 2800€. In 2017, the average (mean) wage for Finnish municipal employees in fulltime, regular work was 3049€. For male municipal employees, the mean wage was 3458€ and, for females, 2943€ (http://www.stat.fi/til/ksp/). Approximately one-third of the respondents (34%) had not considered early retirement. Nearly 70% of the respondents were not against the idea of continuing working after reaching the official retirement age.

Please insert Table 1 about here.

Measures

The questionnaire covered broad areas, such as perceptions about wellbeing, health, pension reform, retirement intentions, work ability, resilience, job satisfaction, organizational commitment, perceived HRM practices, managerial and co-worker support, and perceived development opportunities.

In the resilience literature, there is no consensus regarding how adversities should be measured (see, e.g., Britt et al., 2016). In the present study, resilience was measured using Hardy et al.’s (2004) scale. A translation-back-translation method was used when translating the resilience scale. Respondents were asked to indicate whether they had encountered a stressful event during the previous five years. A list of stressful events were provided, including 1) one’s own
sickness/injury/accident; 2) a partner’s or child’s sickness/injury/accident; 3) a partner’s or child’s death; 4) close one’s sickness/injury/accident; 5) close one’s death; 6) divorce/separation; 7) maltreatment/a dangerous situation/a psychological or physical threat; 8) financial distress; 9) relocation; 10) other event; and 11) nothing stressful happened. Those who had experienced a stressful event were asked to evaluate the stressfulness of the event on a scale from 0 (not very stressful) to 10 (extremely stressful). After that, the questionnaire asked how the individual had perceived the stressful event, how they had recovered from it, and what the consequences of the stressful event were. The resilience scale varied from 0 (low resilience) to 18 (high resilience) (see, Hardy et al., 2004, p. 258). Adversities were measured similarly in Hildon et al.’s (2008) study focusing on older individuals (70+).

The HIWPs scale was based on Harmon et al.’s (2003) scale. The scale included 10 Likert-scale items concerning, for example, information sharing, performance-based rewards, teamwork, empowerment, and trust between a supervisor and the employees. The respondents were asked to evaluate the extent to which the items were present in their workplace (see, e.g., Harmon et al., 2003). A sample item is “There is trust between employees and the supervisor.” The scale anchors were 1) very little, 2) relatively little, 3) neither little or much, 4) relatively much, and 5) very much. The Cronbach’s alpha value was 0.875.

In this study, retirement intentions are used as an estimate for an individual’s actual retirement behavior, in line with several previous studies (Stynen et al., 2017; Davies and Cartwright, 2011). Older nursing professionals’ early retirement intentions were measured with one question: “Have you thought about retiring before the age of retirement?” A similar question was used in Stynen et al.’s (2017) study. For logistic regression analyses, the scale was divided into those who had no intentions of early retirement (1) and those who had at least sometimes
considered early retirement (0). The intention to continue working after retirement age was measured with the statement, “I believe that my health will allow me to continue working in my current profession after the age of 63.” The three-point response scale was divided into yes/maybe (1) and no (0). The same question was used in Vanhala’s (2013) study. The use of health-specific retirement questions can be justified by the notion that health is often seen as a significant factor influencing an employee’s ability to continue working into older age (Beehr and Bennett, 2015).

**Statistical analysis**

Percentages, means, standard deviations, and correlation analysis (Spearman) were used to describe the data (SPSS 22.0). The four-step procedure suggested by Baron and Kenny (1986) was followed when testing the mediation model. According to Baron and Kenny (1986), to test a mediation, the following steps must be followed. First, there must be an association between the predictor variable (perceived HIWPs) and the outcome variable (retirement intentions) (H1a-b). Second, the predictor variable (perceived HIWPs) must be linked to the mediator variable (resilience) (H2). Third, there must be a significant association between the mediator variable (resilience) and the outcome variable (retirement intentions) (H3a-b). Fourth, after controlling for the mediator variable (resilience), the association between the independent variable (perceived HIWPs) and the outcome variable (retirement intentions) should be insignificant (full mediation) or reduced (partial mediation) (H4a-b) (Wood et al., 2008). Logistic regression analyses (Enter method) were used to test Hypotheses 1a-b, 3a-b, and 4a-b because the dependent variables (early retirement intentions and intentions to continue working after the official retirement age) were dichotomous, whereas linear regression analysis (Enter method) was used to test Hypothesis 2 because resilience was not a dichotomous variable. The
variables were standardized before running the regression analyses. In the logistical regression analyses, Nagelkerke $R^2$ was used, describing the amount the model can explain (Nagelkerke, 1991). Age (continuous), gender (female = 1, male = 0), marital status (1 = married/non-marital relationship, 0 = unmarried/divorced/widowed), and education (1 = bachelor’s degree or higher, 0 = college level or lower) were included in the regression models as control variables, as these are often related to retirement intentions (Beehr and Bennett, 2015). Additionally, there is some evidence that age, gender, and education level are related to individual resilience (Bonanno et al., 2007).

**Results**

The respondents were asked to report the most stressful event that had occurred in their life during the previous five years. A close one’s death (21%) and one’s own (17%) or partner’s/child’s sickness, injury, or accident (12%) were the most commonly reported stressful events (Table 2). Divorce (4%), maltreatment (4%), financial issues (4%), and relocation (2%) were the events most rarely mentioned. 18% of the respondents indicated they had not experienced any stressful events during the previous five years.

Please insert Table 2 about here.

The stressful events were further categorized into four categories, in line with Hardy et al.’s (2004) study. These categories included: 1) personal illness (20%, n = 65), 2) the death of a family member or friend (29%, n = 90), 3) the illness of a family member or friend (24%, n = 76), and 4) a nonmedical event (27%, n = 84). All of these events were perceived as rather
stressful (scale 0–10) by the nursing professionals (Table 3). No statistically significant differences between the nature of the event and the perceived stressfulness were found. The highest levels of stressfulness were related to one’s own personal illness (M = 8.17, SD = 1.61), followed by the illness of a family member or friend (M = 8.07, SD = 1.75).

By using cross tabulation, a statistically significant relationship between the stressful event and resilience levels was found ($\chi^2 = 35.74$, df = 6, $p < 0.001$). Higher resilience was demonstrated when the stressful event was related to the death or illness of a family member or friend (Table 4).

The relationships between resilience, perceived HIWPs, and different retirement intentions were analyzed by using correlation and regression analyses. The mean values for resilience (Mean = 10.22, SD = 3.85) and HIWPs (Mean = 3.32, SD = 0.62) were moderate (Table 5). Age correlated negatively with early retirement intentions ($r = -0.118$, $p < 0.05$) and positively with intentions to continue working after retirement age ($r = 0.320$, $p < 0.01$). Resilience was positively associated with perceived HIWPs ($r = 0.121$, $p < 0.05$) and intentions to continue working after retirement age ($r = 0.172$, $p < 0.01$) and negatively with early retirement intentions ($r = -0.196$, $p < 0.01$). Similarly, perceived HIWPs were negatively related to early retirement intentions ($r = -0.207$, $p < 0.01$) and positively with intentions to continue working after retirement age ($r = 0.240$, $p < 0.01$). There was a strong negative correlation between early
retirement intentions and intentions to continue working after retirement age \( r = -0.535, p < 0.01 \).

Please insert Table 5 about here.

In line with Baron and Kenny (1986), the first logistic regression model tested the relationship between perceived HIWPs and early retirement intentions (H1a). In Model I (Table 6), being married or in a non-marital relationship \( (OR = 0.544) \) decreased the odds of not retiring before retirement age, whereas HIWPs perceived as good \( (OR = 1.533) \) increased the odds of not retiring before retirement age. Model II tested the relationship between perceived HIWPs and resilience (H2), and a statistically significant positive association was found \( (\beta = 0.154, p = 0.05) \). Additionally, gender \( (\beta = -0.151, p = 0.05) \) and marital status \( (\beta = 0.158, p = 0.05) \) were statistically significantly related to resilience. Compared to the female respondents, the male respondents had higher levels of resilience. Resilience levels were also higher among those who were married or in a non-marital relationship compared to single respondents. Model III shows that resilience increased the odds of not retiring before retirement age \( (OR = 1.490) \) (H3a). In Model IV, the mediation of resilience was tested (H4a). The effect of perceived HIWPs was reduced \( (OR = 1.364) \) once resilience \( (OR = 1.438) \) was included in the model at the same time, indicating that resilience partially mediates the relationship between perceived HIWPs and early retirement intentions. However, Nagelkerke R\(^2\) was relatively low in the tested models.

Please insert Table 6 about here.

Table 7 indicates the results of testing the relationship between perceived HIWPs and intentions to continue working after retirement age (H1b). In Model I, older age \( (OR = 1.417) \) and HIWPs
perceived as good (OR = 1.373) increased the odds for continuing to work after old age retirement age. Model II is identical to Model II in Table 6. Model III (H3b) shows that resilience increased the odds for continuing to work after retirement age (OR = 1.560). In Model IV (H4b), the effect of HIWPs became insignificant once resilience (OR = 1.507) was included in the regression, indicating that resilience fully mediates the relationship between perceived HIWPs and intentions to continue working after retirement age. Nagelkerke R² was rather low in the tested models.

**Discussion**

This study investigated the links between perceived HIWPs, resilience, and retirement intentions. Furthermore, it tested the possible mediating role of resilience in the relationship between perceived HIWPs and retirement intentions. The results indicated that most of the respondents had confronted an adverse life event during the previous five years and that the event was perceived as highly stressful. Most of the stressful events were related to one’s own or a close one’s illness. This finding supports Hildon et al.’s (2008) notion that individuals are likely to face health-related adversities in older age. The results showed that perceived HIWPs were negatively related to early retirement intentions and positively associated with intentions...
to continue working after retirement age, supporting Hypotheses 1a and 1b. The perceived HIWPs were also positively related to resilience, supporting Hypothesis 2. This result supports previous studies, which have demonstrated the importance of HRM practices for enhancing employee resilience (Cooke et al., 2016; Bardoel et al., 2014). In line with Bonanno et al.’s (2007) study, this study’s results indicate that males had higher levels of resilience compared to females. Furthermore, the study shows that resilience levels were higher for nursing professionals who were married or in a non-marital relationship. In line with the COR theory, close relationships, such as marriage, can be considered a resource that can have a positive influence on an individual’s resilience (Bonanno et al., 2007). Hypotheses 3a and 3b were also confirmed; resilience was significantly related to both forms of retirement intentions. High resilience decreased the odds for early retirement intentions and increased the odds for continuing to work after reaching retirement age. Consequently, this study illuminates the significance of resilience regarding retaining older employees in working life (Luthans et al., 2006). The results showed that resilience partially mediated the relationship between perceived HIWPs and early retirement intentions and fully mediated the relationship between perceived HIWPs and intentions to continue working after reaching the official retirement age. This finding provides evidence for the mediating role of resilience in the relationship between perceived HRM practices and employee-level outcomes (Cooke et al., 2016). Current results indicate that HRM practices can be used to some extent to influence older nursing professionals’ early retirement intentions. When addressing intentions to continue working beyond the official retirement age, HRM practices can strengthen the resilience of older employees, contributing to their abilities to continue working after official retirement age. Interestingly, marital status was significantly related to early retirement intentions. Unmarried, divorced, or widowed nursing professionals were less likely to retire early compared to those who were married or in a non-marital relationship. Perhaps, single nursing professionals have a stronger financial
necessity for continuing to work (Shacklock and Brunetto, 2011; Templer et al., 2010) or their engagement in family responsibilities differs from their married colleagues (Beehr and Bennett, 2015). In line with Davies and Cartwright’s (2011) study, the results of the present study demonstrated that older age increased the odds for continuing to work beyond the official retirement age. In other words, in a sample of nurses aged 50 and over, higher age was found to be associated with intentions to continue working beyond retirement age, compared to younger age.

Theoretical contribution

The theoretical contribution of this study is threefold. First, it examined the associations between perceived HRM practices and employee resilience, providing more evidence about the role of HRM in employees’ resilience (Bardoel et al., 2014; Cooke et al., 2016; Britt et al., 2016). Evaluating individual resilience has primarily focused on early life, such as examining when individuals enter into military service or working life (Britt et al., 2016, p. 388). Most of the attention has been focused on resilience training, especially in a military context (Britt et al., 2016). Only limited attention has been given to HRM practices that support employee resilience (Bardoel et al., 2014). Surprisingly little attention has been given to late-career resilience, even though individuals will likely encounter adverse life events when they get older (Ezeamama et al., 2016). This study contributes to this discussion by demonstrating a significant positive association between perceived HIWPs and the level of resilience in older nursing professionals.

Second, this study investigated the association between resilience and retirement intentions, extending the knowledge concerning the outcomes of individual-level resilience (King et al.,
2016). Resilience has been considered an important component of individuals’ PsyCap, indicating that employees with high resilience are more able to cope with and adapt to the changes in their working environment (Luthans et al., 2006). This study’s results provide evidence that older nursing professionals with high levels of resilience are more likely to continue working until and even beyond retirement age than those with lower levels of resilience.

Third, this study investigated the possible mediating role of employee resilience in the relationship between perceived HRM practices and retirement intentions. Only a few HRM studies have investigated the possible mediating role of resilience between HRM practices and employee-level outcomes (Cooke et al., 2016; Shin et al., 2012). In line with the COR and social exchange theories, the current findings indicate that HRM practices provided by the organization can have a positive impact on older employees’ resilience, which in turn can influence their late-career intentions.

Managerial implications

Most of the studied older nursing professionals had confronted a stressful event during the previous five years. It is likely that those events at least partly influence their late-career and retirement decisions. Based on these results, it is important for HR professionals and supervisors to be aware of the adversities older employees are likely to face. For example, resilience as a specific topic could be included in late-career discussions among older employees (Brandan et al., 2013/2014). Furthermore, surveys measuring resilience as a part of wellbeing at work would help HR professionals to identify the current levels of resilience among employees and help indicate how these levels could be improved. This information
could be used when HR professionals design and implement practices aiming to strengthen employee resilience. The results of this study indicate that HRM practices, such as HIWPs, can be used to reinforce older employees’ resilience, improving their abilities to continue working. Furthermore, HR professionals and supervisors could pay more attention to the social networks in the organization, because strengthening the social capital of employees may be one way to support employee resilience (cf. Luthans et al., 2006). Strong organizational culture together with HIWPs may also buffer employees from the adversities and uncertainties taking place inside and outside organizational boundaries. (cf. Luthans et al., 2006). In the future, an increasing number of older employees will be expected to remain working longer. Therefore, managers should focus on HRM practices that aim to enhance employee resilience during the late-career period.

Limitations and suggestions for future research

This study has some limitations. First, the study focused on older nursing professionals working in one organization, thus limiting the generalizability of the results. Because most of the respondents were female, possibilities to generalize the results to male nursing professionals is limited. Future research regarding the role of resilience in the retirement process should include an equal proportion of men and women. Secondly, resilience has been conceptualized and measured differently across different studies (Linnenluecke, 2017). No universal agreement exists concerning the measurement of adverse life events and adaption to those events (Britt et al., 2016). This study employed the resilience scale developed by Hardy et al. (2004) and analyzed resilience as an individual’s response to adverse life situations rather than as a personality trait. The primary focus of Hardy et al.’s (2004) resilience scale was on adverse events outside the workplace, such as an individual’s own sickness or the sickness of a loved
one. In the future, more information is needed about the adverse events experienced in the workplace, such as work overload, problems with one’s supervisor, and harassment (Britt et al., 2016, p. 381). Thirdly, due to this study’s cross-sectional setting, the causality of the studied variables cannot be verified. By using longitudinal data, it would be possible to investigate the process of resilience, as well as the resilience trajectories (Britt et al., 2016; King et al., 2016). This study focused on perceived HRM practices as antecedents of resilience, but there are also factors inside and outside working life, such as social networks, which are likely to influence resilience (see, e.g., Hildon et al., 2008; Luthans et al., 2006). Additionally, it is postulated that specific HR practices, such as mindfulness training, may be useful for enhancing employee resilience (Thogersen-Ntoumani et al., 2017). Future studies could examine the impact of those types of programs. Finally, the focus of this study was on individual-level resilience. The connections between individual-, group-, and organization-level resilience could be an interesting path for future studies (see, e.g., Linnenluecke, 2017, p. 25).

References

Alfes, K., Shantz, A.D., Truss, C. and Soane, E.C. (2013), “The link between perceived human resource management practices, engagement and employee behaviour: a moderated mediation model”, The International Journal of Human Resource Management, Vol. 24 No. 2, pp. 330–351.

Armstrong-Stassen, M., Freeman, M., Cameron, S. and Rajacic, D. (2015), “Nurse managers’ role in older nurses’ intention to stay”, Journal of Health Organization and Management, Vol. 29 No. 1, pp. 55–74.

Armstrong-Stassen, M., Schlosser, F. and Zinni, D. (2012), “Seeking resources: predicting retirees’ return to their workplace”, Journal of Managerial Psychology, Vol. 27 No. 6, pp. 615–635.
Bardoel, E.A., Pettit, T.M., De Cieri, H. and McMillan, L. (2014), “Employee resilience: an emerging challenge for HRM”, *Asia Pacific Journal of Human Resources*, Vol. 52 No.3, pp. 279–297.

Baron, R.M. and Kenny, D.A. (1986), “The moderator-mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations”. *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173–1182.

Bayl-Smith, P.H. and Griffin, B. (2014), “Age discrimination in the workplace: identifying as a late-career worker and its relationship with engagement and intended retirement age”, *Journal of Applied Social Psychology*, Vol. 44 No. 9, pp. 588–599.

Beehr, T.A. and Bennett, M.M. (2015), “Working after retirement: features of bridge employment and resource directions”, *Work, Aging and Retirement*, Vol. 1 No. 1, pp. 112–128.

Bonanno, G.A., Galea, S., Bucciarelli, A. and Vlahov, D. (2007), “What predicts psychological resilience after disaster? The role of demographics, resources, and life stress”, *Journal of Consulting and Clinical Psychology*, Vol. 75 No. 5, pp. 671–682.

Brandan, M.M., Goddard, N.A., Kabir, B., Lofton, S.S., Ruiz, J. and Hau, J.M. (2013/2014), “Resilience and retirement coping self-efficacy and collective self-efficacy: implementing positive psychology during times of economic hardship for late-career individuals”, *Career Planning and Adult Development Journal*, Vol. 20 No. 4 (Winter 2013/2014), pp. 25–36.

Britt, T.W., Shen, W., Sinclair, R.R., Grossman, M.R. and Klieger, D.M. (2016), “How much do we really know about employee resilience?”, *Industrial and Organizational Psychology*, Vol. 9 No. 2, pp. 378–404.
Chen, S., Westman, M. and Hobfoll, S.E. (2015), “The commerce and crossover of resources: resource conservation in the service of resilience”, *Stress and Health*, Vol. 31 No. 2, pp. 95–105.

Cooke, F.L., Cooper, B., Bartram, T., Wang, J. and Mei, H. (2016), “Mapping the relationships between high-performance work systems, employee resilience and engagement: a study of the banking industry in China”, *The International Journal of Human Resource Management*, available at: https://doi.org/10.1080/09585192.2015.1137618 / (accessed 7 January 2018).

Dal Bianco, C., Trevisan, E. and Weber, G. (2015), “‘I want to break free’. The role of working conditions on retirement expectations and decisions”, *European Journal of Ageing*, Vol. 12, No 1, pp. 17–28.

Davies, E. and Cartwright, S. (2011), “Psychological and psychosocial predictors of attitudes to working past normal retirement age”, *Employee Relations*, Vol. 33 No. 3, pp. 249–268.

Eläkeuudistus.fi [Pension reform.fi], available at: http://www.elakeuudistus.fi/briefly-in-english.html (accessed 7 January 2018).

Etikan, I., Musa, S.A. and Alkassim, R.S. (2016), ”Comparison of convenience sampling and purposive sampling”, *American Journal of Theoretical and Applied Statistics*, Vol. 5 No 1, pp. 1–4.

Ezeamama, A.E., Elkins, J., Simpson, C., Smith, S.L., Allegra, J.C. and Miles, T.P. (2016), “Indicators of resilience and healthcare outcomes: findings from the 2010 health and retirement survey”, *Quality of Life Research*, Vol. 25 No. 4, pp. 1007–1015.

Gerber, M., Jonsdottir, I.H., Lindwall, M. and Ahlborg, G. (2014), “Physical activity in employees with differing occupational stress and mental health profiles: a latent profile analysis”, *Psychology of Sport and Exercise*, Vol. 15 No. 6, pp. 649–658.
Gorgievski, M.J., Halbesleben, J.R.B. and Bakker, A.B. (2011), “Expanding the boundaries of psychological resource theories”, *Journal of Occupational and Organizational Psychology*, Vol. 84 No. 1, pp. 1–7.

Hardy, S.E., Concato, J., and Gill, T.M. (2004), “Resilience of community-dwelling older persons”, *American Geriatrics Society*, Vol. 52 No. 2, pp. 257–262.

Harmon, J., Scotti, D. J., Behson, S., Farias, G, Petzel, R, Neuman, J H. and Keashly, L. (2003), “Effects of high-involvement work systems on employee satisfaction and service costs in veteran healthcare”, *Journal of Healthcare Management*, Vol. 48 No. 6, pp. 393–404.

Hennekam, S. (2015), “Employability of older workers in Netherlands: antecedents and consequences”, *International Journal of Manpower*, Vol. 36 No. 6, pp. 931–946.

Herrbach, O., Mignonac, K., Vandenberghe, C. and Negrini, A. (2009), “Perceived HRM practices, organizational commitment and voluntary early retirement among late-career managers”, *Human Resource Management*, Vol. 48 No 6, pp. 895–915.

Hildon, Z., Smith, G., Netuveli, G. and Blane, D. (2008), “Understanding adversity and resilience at older ages”, *Sociology of Health and Illness*, Vol. 30 No. 5, pp. 726–740.

King, D.D., Newman, A. and Luthans, F. (2016), “Not if, but when we need resilience in the workplace”, *Journal of Organizational Behavior*, Vol. 37 No. 5, pp. 782–786.

Kooij, D.T.A.M, Guest, D.E., Clinton, M., Knight, T., Jansen, P.G.W. and Dikkers, J.S.E. (2013), “How the impact of HR practices on employee well-being and performance change with age”, *Human Resource Management Journal*, Vol. 23 No. 1, pp. 18–35.
Kossek, E.E. and Perrigino, M.B. (2016), “Resilience: A review using a grounded integrated occupational approach”, *The Academy of Management Annals*, Vol. 10 No 1, pp. 729–797.

Kuvaas, B. (2008), “An exploration of how the employee-organization relationship affects the linkage between perception of developmental human resource practices and employee outcomes”, *Journal of Management Studies*, Vol. 45 No. 1, pp. 1–25.

Linnenluecke, M.K. (2017), “Resilience in business and management research: a review of influential publications and a research agenda”, *International Journal of Management Reviews*, Vol. 19 No. 1, pp. 4–30.

Luthans, F., Avolio, B.J., Walumbwa, F.O. and Li, W. (2005), “The psychological capital of Chinese workers: exploring the relationship with performance”, *Management and Organization Review*, Vol. 1 No. 2, pp. 247–269.

Luthans, F., Vogelgesang, G.R. and Lester, P.B. (2006), “Developing the psychological capital of resilience”, *Human Resource Development Review*, Vol. 5 No. 1, pp. 25–44.

Lyons, S.T., Schweitzer, L. and Ng, E.S.W. (2015), “Resilience in the modern career”, *Career Development International*, Vol. 20 No. 4, pp. 363–383.

Mauno, S., Ruokolainen, M. and Kinnunen, U. (2013), “Does aging make employees more resilient to job stress? Age as a moderator in the job stressor–well-being relationship in three Finnish occupational samples”, *Aging & Mental Health*, Vol. 17 No. 4, pp. 411–422.

Meng, H., Luo, Y., Huang, L., Wen, J., Ma, J. and Xi, J. (2017), “On the relationships of resilience with organizational commitment and burnout: a social exchange perspective”, *The International Journal of Human Resource Management*, available at: [http://doi.org/10.1080/09585192.2017.1381136](http://doi.org/10.1080/09585192.2017.1381136) (accessed 29 October 2018).
Nagelkerke, N.J.D. (1991), “A note on a general definition of the coefficient of determination”, *Biometrika*, Vol. 78 No. 3, pp. 691–692.

Official Statistics of Finland (OSF): Local government sector wages and salaries [e-publication]. [http://www.stat.fi/til/ksp/index_en.html](http://www.stat.fi/til/ksp/index_en.html) (accessed 31 August 2018).

Pensions at a Glance (2017), OECD and G20 Indicators, available at: [https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017_pension_glance-2017-en](https://www.oecd-ilibrary.org/social-issues-migration-health/pensions-at-a-glance-2017_pension_glance-2017-en) (accessed 13 June 2018).

Shacklock, K. and Brunetto, Y. (2011), “A model of older workers’ intentions to continue working”, *Personnel Review*, Vol. 40 No. 2, pp. 252–274.

Shin, J., Taylor, M.S. and Seo, M-G. (2012), “Resources for change: the relationships of organizational inducements and psychological resilience to employees’ attitudes and behaviors toward organizational change”, *Academy of Management Journal*, Vol. 55 No. 3, pp. 727–748.

Smith, G.C. and Hayslip Jr., B. (2012), “Chapter 1: resilience in adulthood and later life. What does it mean and where are we heading?”, *Annual Review of Gerontology and Geriatrics*, Vol. 32 No. 1, pp. 1–28.

Sonnet, A., Olsen, H. and Manfredi, T. (2014), “Towards more inclusive ageing and employment policies: the lessons from France, the Netherlands, Norway and Switzerland”, *De Economist*, Vol. 162 No. 4, pp. 315–339.

Sterns, H.L. and Dawson, N.T. (2012), “Chapter 11: emerging perspectives on resilience in adulthood and later life. Work, retirement, and resilience,” *Annual Review of Gerontology and Geriatrics*, Vol. 32 No. 1, pp. 211–230.

Stynen, D., Jansen, N.W.H. and Kant, I. (2017), “The impact of work-related and personal resources on older workers’ fatigue, work enjoyment and retirement intentions over time”, *Ergonomics*, Vol. 60 No. 12, pp. 1692–1707.
Templer, A., Armstrong-Stassen, M. and Cattaneo, J. (2010), “Antecedents of older workers’ motives for continuing to work”, Career Development International, Vol. 15 No. 5, pp. 479–500.

Tenhunen, S. (2017), “Eläkeikä nousee mutta joustot säilyvät. Kyselytutkimus vuoden 2017 eläkeuudistuksesta ja työssäjatkmisaikeista” [Retirement age will rise but flexibility will remain. Survey regarding year 2017 pension reform and intentions to continue working] Eläketurvakeskuksen tutkimuksia 05/2017, available at: http://www.etk.fi/wp-content/uploads/elakeika-nousee-mutta-joustot-sailyvat-1.pdf (accessed 13 June 2018).

Thogersen-Ntoumani, C., Black, J., Lindwall, M., Whittaker, A. and Balanos, G.M. (2017), “Presenteeism, stress resilience, and physical activity in older manual workers: a person-centered analysis”, European Journal of Ageing. Vol. 14 No. 4, pp. 385–396. available at: http://doi.org/10.1007/s10433-017-0418-3

Tilastoraportti 2018. Terveys- ja sosiaalipalvelujen henkilöstö 2014. [Statistical report 2018. Personnel in health and social services 2014.] http://www.julkari.fi/bitstream/handle/10024/135915/TR_01_18.pdf?sequence=1&isAllowed=y (accessed 31 August 2018).

Topa, G. and Alcover, C-M. (2015), “Psychosocial factors in retirement intentions and adjustment: a multi-sample study”, Career Development International, Vol. 20 No 4, pp. 384–408.

Topa, G., Depolo, M. and Alcover, C-M. (2018), “Early retirement: a meta-analysis of its antecedent and subsequent correlates”, Frontiers in Psychology, Vol. 8, No. 2157. http://doi.org/10.3389/fpsyg.2017.02157 / (accessed 7 August 2018).

Vanhala, S. (Ed). (2013), “HYÖTY – Hyvinvointia ja tulokseesuutta hyväällä henkilöstöjohtamisella” [BENEFIT – Wellbeing and profitability through good
human resource management] Aalto University, Helsinki, available at:
http://epub.lib.aalto.fi/pdf/hseother/Aalto_Report_KT_2013_005.pdf (accessed 12 June 2018).

Veth, K.N., Korzilius, H.P.L.M., Van der Heijden, BI. J.M., Emans, B.J.M. and De Lange, A.H. (2017), "Which HRM practices enhance employee outcomes at work across the life-span?", The International Journal of Human Resource Management, DOI: 10.1080/09585192.2017.1340322 (accessed 16 October 2018).

Von Bonsdorff, M.E., Zhou, L., Wang, M., Vanhala, S., von Bonsdorff M.B., & Rantanen T. (2018), "Employee Age and Company Performance: An Integrated Model of Aging and Human Resource Management Practices" Journal of Management, Vol. 88 No 8, pp. 3124-3150.

Wang, M. (2007), “Profiling retirees in retirement transition and adjustment process: examining the longitudinal change patterns of retirees’ psychological well-being”, Journal of Applied Psychology, Vol. 92 No. 2, pp. 455–474.

Women and men in Finland 2016. Statistics Finland. http://www.stat.fi/tup/julkaisut/tiedostot/julkaisuluettelo/yyti_womefi_201600_2016_16133_net.pdf (accessed 6 August 2018).

Wood, R.E., Goodman, J.S., Beckmann, N. and Cook, A. (2008), “Mediation testing in management research”, Organizational Resource Methods, Vol. 11 No. 2, pp. 270–295.

Yilmaz, E.B. (2017), “Resilience as a strategy for struggling against challenges related to the nursing profession”, Chinese Nursing Research, Vol. 4 No. 1, pp. 9–13.
Figure 1 The hypothesized relationships between perceived HIWPs, resilience and retirement intentions

Table 1 Demographic characteristics (%, n)

| Category                           | Percentage (%), Count (n) |
|------------------------------------|---------------------------|
| **Gender**                         |                           |
| Women                              | 90 (353)                  |
| Men                                | 10 (39)                   |
| **Age, mean ± SD**                 | 57.0 ± 3.7                |
| **Education**                      |                           |
| College level or lower             | 78 (305)                  |
| Bachelors’ degree or upper         | 22 (84)                   |
| **Form of employment**             |                           |
| Permanent (full or part-time)      | 93 (364)                  |
| Temporary (full or part-time)      | 7 (27)                    |
| **Working time**                   |                           |
| Regular day or night work          | 50 (195)                  |
| Shift work                         | 50 (194)                  |
| **Overwork**                       |                           |
| Not at all                         | 18 (68)                   |
| Occasionally                       | 67 (258)                  |
| Regularly                          | 16 (62)                   |
| **Pay €/month, mean ± SD**         | 2843.8 ± 1215.4           |
| **Marital status**                 |                           |
Married or in non-marital relationship 72 (280)
Single (including divorced and widowed) 28 (109)

**Early retirement intentions, % (n)**
I have not thought about early retirement 34 (135)
I have at least sometimes thought about early retirement 66 (261)

**Intentions to continue working after official retirement age, % (n)**
Yes / maybe 67 (230)
No 33 (112)

| The most stressful event | % (n) |
|--------------------------|------|
| Own sickness, injury or accident | 17 (65) |
| Partner's or child's sickness, injury or accident | 12 (48) |
| Partner's or child's death | 2 (8) |
| Close one's sickness, injury or accident | 7 (28) |
| Close one's death | 21 (82) |
| Divorce or separation | 4 (15) |
| Maltreatment / dangerous situation / psychological or physical treat | 4 (17) |
| Financial distress | 4 (17) |
| Relocation | 2 (8) |
| Other event | 7 (27) |
| Nothing stressful has happened | 18 (71) |

Table 2 The most stressful event during the last five years (% , n)

| Stressful event | N  | Mean | SD  |
|-----------------|----|------|-----|
| Personal illness | 65 | 8.17 | 1.61 |
| Death of a family member or friend | 90 | 7.52 | 2.27 |
| Illness of a family member or friend | 74 | 8.07 | 1.75 |
| Nonmedical event | 79 | 7.91 | 2.14 |
| Total | 308 | 7.89 | 2.00 |

Table 3 Stressfulness of the event (M, SD)
### Table 4 Stressful events and the level of resilience (%, n)

| Level of resilience | Personal illness | Death of a family member or friend | Illness of a family member or friend | Nonmedical event |
|---------------------|-----------------|------------------------------------|-------------------------------------|-----------------|
| Low (0-6)           | 21%             | 11%                                | 10%                                 | 34%             |
| Intermediate (7-10) | 43%             | 17%                                | 26%                                 | 29%             |
| High (11-18)        | 36%             | 72%                                | 64%                                 | 37%             |
| Total               | 100%            | 100%                               | 100%                                | 100%            |

### Table 5 Means, Standard Deviations and correlations (Spearman) of the study variables

|                    | Mean | SD  | 1     | 2     | 3     | 4     | 5     |
|--------------------|------|-----|-------|-------|-------|-------|-------|
| 1 Age              | 57.01| 3.69|       |       |       |       |       |
|                    |      |     | (n = 391) |       |       |       |       |
| 2 Resilience       | 10.22| 3.85| .022  | .145* | .121* |       |       |
|                    |      |     | (n = 267) |       |       |       |       |
| 3 HIWPs            | 3.32 | 0.62| .185  | .121* |       |       |       |
|                    |      |     | (n = 384) |       |       |       |       |
| 4 Early retirement intentions | 1.11 | 1.09| -.118*| -.196**| -.207**|       |
|                    |      |     | (n = 384) | (n = 267) | (n = 381) |       |       |
| 5 Intentions to continue working after retirement age | 1.04 | 0.83| .320**| .172**| .241**| -.535**| 1     |
|                    |      |     | (n = 340) | (n = 233) | (n = 339) | (n = 339) |       |

*p < 0.05, **p < 0.01
Table 6 (Logistic) regression analyses for testing the relationships between perceived HIWPs, resilience and early retirement intentions

| Variables         | Model I (Early retirement intentions) | Model II (Resilience) | Model III (Early retirement intentions) | Model IV (Early retirement intentions) |
|-------------------|----------------------------------------|------------------------|-----------------------------------------|----------------------------------------|
|                   | B (SE) | Exp β (OR) | B (SE) | β | B (SE) | Exp β (OR) | B (SE) | Exp β (OR) |
| Age               | 0.085  | 1.088     | 0.126  | (0.248) | 0.032  | 0.106  | 1.112  | 0.059  | 1.060  |
| Gender            | -0.363 | (0.370)   | 0.696  | -1.989* | (0.813) | -0.151* | 0.130  | 1.139  | 0.088  | 1.092  |
| Marital status    | 0.608* | (0.251)   | 0.544* | 1.334* | (0.520) | 0.158* | -0.762* | (0.303) | 0.467* | -0.846** | (0.310) | 0.429** |
| Education         | 0.219  | (0.274)   | 0.215  | 0.558  | 0.024  | 0.467  | (0.320) | 1.595  | 0.476  | 1.609  |
| Resilience        | -      | -         | -      | -      | -      | -      | -      | -      | -      | -      |
| Perceived HIWPs   | 0.427** | (0.128) | 1.533** | 0.608* | (0.245) | 0.154* | -      | -      | -      | 0.311* | (0.155) | 1.364* |
| Nagelkerke R²     | 0.077  |            |        | 0.078  |            | 0.101  |            |        |        |        |
| N                 | 361    |            | 252    |        | 254    |        | 252    |        |        |        |

Notes: B = Unstandardized beta; SE = Standard error; β = Standardized beta; OR = Odds ratio; * p < .05, ** p < .01; Model II uses linear regression analysis to test effect of HIWPs on resilience.

Table 7 (Logistic) regression analyses for testing the relationships between perceived HIWPs, resilience and intentions to continue working after retirement age

| Variables         | Model I (Intentions to continue working after retirement age) | Model II (Resilience) | Model III (Intentions to continue working after retirement age) | Model IV (Intentions to continue working after retirement age) |
|-------------------|---------------------------------------------------------------|------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
|                   | B (SE) | Exp β (OR) | B (SE) | β | B (SE) | Exp β (OR) | B (SE) | Exp β (OR) |
| Age               | 0.348** | (0.125) | 1.417** | 0.126  | (0.248) | 0.032  | 0.475** | (0.152) | 1.607** | 0.431** | (0.154) | 1.538** |
| Gender            | 0.208  | (0.387)   | 1.231  | -1.989* | (0.813) | -0.151* | 0.463  | (0.484) | 1.590  | 0.425  | (0.489) | 1.530  |
| Marital status    | -0.026 | (0.273)   | 0.974  | 1.334* | (0.520) | 0.158* | -0.186 | (0.332) | 0.831  | -0.268 | (0.336) | 0.765  |
| Education         | -0.062 | (0.288)   | 0.940  | 0.215  | (0.558) | 0.024  | 0.151  | (0.346) | 1.163  | 0.143  | (0.350) | 1.154  |
| Resilience        | -      | -         | -      | -      | -      | -      | -      | -      | -      | -      | -      | -      |
| Perceived HIWPs   | 0.317* | (0.125) | 1.373* | 0.608* | (0.245) | 0.154* | -      | -      | -      | 0.296  | (0.159) | 1.507** |
| Adjusted R²       | 0.074  |            |        | 0.120  |            | 0.138  |            |        |        |        |
| Nagelkerke R²     | 0.317  |            |        | 252    |            | 220    |            |        |        |        |
| N                 | 317    |            |        | 252    |            | 218    |            |        |        |        |
Notes: $B =$ Unstandardized beta; $SE =$ Standard error; $\beta =$ Standardized beta; $OR =$ Odds ratio; * $p < .05;$ **$p < .01;$ Model II uses linear regression analysis to test the effect of HIWPs on resilience.