

This is a self-archived version of an original article. This version may differ from the original in pagination and typographic details.

Author(s): Salminen, Hanna; von Bonsdorff, Monika; Vanhala, Mika; McPhee, Deborah; Miettinen, Merja

Title: Organisational and individual resources as antecedents of older nursing professionals' organisational commitment : Investigating the mediating effect of the use of selection, optimisation and compensation strategies

Year: 2021

Version: Published version

Copyright: © 2021 The Authors. Journal of Clinical Nursing published by John Wiley & Sons Lt

Rights: CC BY 4.0


Rights url: <https://creativecommons.org/licenses/by/4.0/>

Please cite the original version:

Salminen, H., von Bonsdorff, M., Vanhala, M., McPhee, D., & Miettinen, M. (2021). Organisational and individual resources as antecedents of older nursing professionals' organisational commitment : Investigating the mediating effect of the use of selection, optimisation and compensation strategies. *Journal of Clinical Nursing*, 13(15-16), 2420-2430. <https://doi.org/10.1111/jocn.15785>

ORIGINAL ARTICLE

Organisational and individual resources as antecedents of older nursing professionals' organisational commitment: Investigating the mediating effect of the use of selection, optimisation and compensation strategies

Hanna Salminen Ph.D, Docent, Research Specialist, Postdoctoral Researcher^{1,2}  |
 Monika von Bonsdorff Ph.D, Docent, Associate Professor Academy of Finland Research Fellow² | Mika Vanhala Ph.D, Associate Professor, Postdoctoral Researcher^{2,3} |
 Deborah McPhee Ph.D, MBA, BAS, Chair Professor, OBHREE⁴ | Merja Miettinen Ph.D, Professor, Vice President⁵

¹Faculty of Management and Business, Tampere University, Tampere, Finland

²University of Jyväskylä School of Business and Economics, Management and Leadership, Jyväskylä, Finland

³LUT University, Lappeenranta, Finland

⁴Goodman School of Business, Brock University, Saint Catharines, Canada

⁵Kuopio University Hospital, Kuopio, Finland

Correspondence

Hanna Salminen Ph.D., Docent, Research Specialist, Faculty of Management and Business, Tampere University, Kanslerinrinne 1, FI-33014, Tampere, Finland.
 Email: hanna.salminen@tuni.fi

Funding information

This study was funded by the Finnish Work Environment Fund (grant number 115192) and the Academy of Finland (grant numbers 294530, 307114 and 303920).

Abstract

Aim and objectives: To investigate how organisational and individual resources are linked to older (50+) nursing professionals' organisational commitment, and to examine the possible mediating role of the active use of selection, optimisation and compensation (SOC) strategies.

Background: Many healthcare organisations need to find ways to retain their older nursing professionals due to nursing shortage.

Design: To test a set of hypotheses, cross-sectional survey data (n = 396) were used. Data were analysed using correlation analysis and partial least-squares structural equation modelling. STROBE Statement for cross-sectional studies has been followed in this study.

Results: The results exhibited that both individual and organisational resources and the active use of SOC strategies were positively associated with older nursing professionals' organisational commitment. The active use of SOC strategies had a partially mediating role in the relationship between individual resource (career management self-efficacy) and organisational commitment. Similarly, career management self-efficacy partially mediated the association between organisational resources (perceived high-involvement work practices) and organisational commitment.

Conclusions: Regarding the retention of older nursing professionals, attention should be paid to both individual and organisational resources and the active use of SOC strategies.

Relevance for clinical practice: By providing opportunities to actively use SOC strategies and by paying attention to career management self-efficacy among older nursing professionals, nursing managers may influence the retention of the older nursing workforce. Similarly, supportive organisational practices can support older nursing professionals' career management self-efficacy and their organisational commitment.

This is an open access article under the terms of the Creative Commons Attribution License, which permits use, distribution and reproduction in any medium, provided the original work is properly cited.

© 2021 The Authors. *Journal of Clinical Nursing* published by John Wiley & Sons Ltd.

KEYWORDS

career management self-efficacy, high-involvement work practices (HIWPs), nurse retention, nursing profession, optimisation and compensation (SOC) theory, organisational commitment, selection

1 | INTRODUCTION

Currently, the healthcare and social sectors in OECD countries employ more employees than ever before (OECD, 2019a). For example, in the Nordic countries, 15% of all jobs are in the healthcare and social sectors (OECD, 2019a). As the number of ageing healthcare professionals increases, hospitals need to rely on their ageing workforce (OECD, 2019a). At the same time, governments in many countries are increasing the official retirement age to tackle societal challenges such as the financing of their respective pension systems (Foster & Walker, 2013; OECD, 2019b). In many ways, the first and foremost action, which would ease the economic burden, would be to prolong work careers during one's entire working life. However, extending the late-career phase can be challenging, especially for those who work in physically and mentally demanding professions, such as nursing. Facilitating commitment towards the job and the organisation, as well as identifying the underlying factors that strengthen commitment, is thus becoming more important (Kwok et al., 2016). Thus, in this paper we focus on organisational and individual resources, and their role in organisational commitment among older nursing professionals and the possible mediating role of selection, optimisation and compensation (SOC) strategies.

Organisational resources, such as human resource management (HRM) practices, can support older employees prolonging their work careers (Bal & De Lange, 2015; Chand & Markova, 2018). Due to the nursing shortage, it has been argued that the retention of nursing professionals is one of the most pressing HRM challenges in the healthcare sector (Seitovirta et al., 2016). In the field of HRM, various theoretical aspects have been applied to explain the importance of HRM practices for the retention of older employees (see, e.g., Kooij et al., 2013). In this research, we apply one of the most recently used theoretical perspectives, namely a lifespan theory of selection, optimisation and compensation (SOC) (see, e.g. Bal & De Lange, 2015; Kooij et al., 2013; Kooij et al., 2014). The SOC theory focuses on how individuals respond to changes in their physical and in their mental resources during their lifespans (Bal & De Lange, 2015; von Bonsdorff et al., 2018). According to SOC theory, the active use of different SOC strategies can be especially beneficial during the late-career phase, when there is a deterioration of individual resources (Moghimi et al., 2017; von Bonsdorff et al., 2014). By using different SOC strategies, individuals can actively try to minimise losses (related to deteriorating health, for example) and maximise gains by selecting achievable goals, optimising one's own resources and compensating for losses (Bal et al., 2013; Kooij et al., 2014). Therefore, the integrated use of SOC strategies is seen to promote individuals' successful ageing in working life (Zacher & Frese, 2011). For older nurses, the active use of SOC strategies can mean, for example,

What does this paper contribute to the wider clinical community?

- Finding ways to retain older nursing professionals in healthcare organisations is an international concern due to the nursing shortage in many countries.
- The results provide new knowledge regarding the role of both organisational and individual resources for the organisational commitment of older nursing professionals and the mediating role of selection, optimisation and compensations strategies.
- Providing opportunities to actively use selection, optimisation and compensations strategies through human resource management practices and by strengthening self-efficacy beliefs can positively contribute to the retention of older nursing professionals.

alternative ways to do their own work while substituting for the potential loss of physical functioning (Müller, Weigl, et al., 2013).

Organisational resources, such as HRM practices, can ease older employees to actively use SOC strategies (von Bonsdorff et al., 2018; Moghimi et al., 2017). However, organisational resources on their own may not be adequate in facilitating longer work careers, rather it may require the interplay between organisational and individual resources, such as career management self-efficacy (Salmela-Aro et al., 2012; Vuori et al., 2012). Career management self-efficacy illustrates individuals' ability to maintain their work motivation despite setbacks that might occur during their own career (Toppinen-Tanner et al., 2016). Similarly, self-efficacy in general refers to an individual's beliefs regarding one's own capabilities to achieve a goal (Bandura, 1997; see, e.g., Oostrom et al., 2016; Chiesa et al., 2016). Self-efficacy, as a concept, reflects an individual's self-competence, and it is an important individual-level resource in the nursing profession (Battistelli et al., 2016). Thus far, only a scant number of studies have investigated career management self-efficacy at an older age in working life (Vuori et al., 2012) and how it is related to the active use of SOC strategies. In this study, we investigate *the significance of both perceived HRM practices and career management self-efficacy for older (50+) nursing professionals' commitment and the possible mediating role of SOC strategies*. Organisational commitment, understood as an employee's attachment to one's own employer organisation (see, e.g. Perreira et al., 2018; Porter et al., 1974), is not only important for the prevention of early retirement of older nursing professionals (Kwok et al., 2016), but also for the effective performance of healthcare organisations (Hisel, 2019).

2 | BACKGROUND

To investigate the role of both organisational and individual resources for older nursing professionals' organisational commitment, this study uses the lifespan theory of selection, optimisation and compensation (SOC). According to this theory, individuals of all ages use SOC strategies in both work and non-work domains to achieve their goals (Baltes & Carstensen, 1996; Weigl et al., 2014). However, in older age, the active use of SOC strategies can ease an individual to achieve one's goals despite decreasing resources (Baltes & Carstensen, 1996). There is also some evidence that due to the changes in the future time perspective during ageing (Kooij et al., 2014), work-related goals may change during the course of an individual's career (Jung & Takeuchi, 2018). For example, the study of Pool, Poell, Berings & ten Cate (2015) showed that while younger nursing professionals' development goals were often related to growth, the maintenance of the current situation was at the centre of goals among older nursing professionals (Pool et al., 2015).

When it comes to selection strategies, the active use of SOC strategies means that an individual prepares himself/herself to deal with changing personal resources and thereby readjusts his/her own goals (Baltes & Carstensen, 1996). In the context of nursing, selection may mean prioritising job tasks according to urgency during periods of high workload or carrying out the most important work tasks first (Müller, Weigl, et al., 2013). Optimisation reflects the use of one's own resources in the best possible way to achieve one's own goals (Baltes & Carstensen, 1996). Extending these concepts to nurses indicates that they are persistent in the way in which they try to meet the prioritised job tasks or make suggestions aimed at improving their work (Müller, Weigl, et al., 2013). In compensation, the goal of an individual remains the same, but the means to achieve that goal is altered (Baltes & Carstensen, 1996). Thus, alternative ways to carry out one's own duties at work could mean, for example, a nurse asking for help from colleagues (Müller et al., 2018; Müller, Weigl, et al., 2013).

In work, organisational practices, such as HRM practices, can assist individuals to actively use their SOC strategies (Moghimi et al., 2017). Especially, HRM practices that are meant to enhance and strengthen individuals' abilities, motivation and opportunities to perform at work (Kehoe & Wright, 2013) can ease the use of SOC strategies during the late-career phase (von Bonsdorff et al., 2018). In the HRM literature, these practices are referred to as high-involvement work practices (HIWPs) (Kehoe & Wright, 2013). HIWPs, as an integrated set of HR practices, are applied to strengthening employees' participation, self-direction and autonomy and thereby influencing employees' involvement and commitment and finally organisational performance (Chênevert et al., 2016; Harmon et al., 2003). For example, the ability to influence one's own working schedules (see, e.g., Kwok et al., 2016) can be considered particularly beneficial for older employees, as it allows them to select and

optimise their own resources in accordance with the job demands (Bal & De Lange, 2015).

It has been demonstrated that individuals' perceptions regarding HIWPs are positively associated with work-related outcomes, such as organisational commitment (Boxall & Macky, 2009). Similarly, a positive association between the active use of SOC strategies and employee attitudes, such as job engagement and job satisfaction, has also been found in previous research (Moghimi et al., 2017). This can be explained by the notion that the active use of SOC strategies can ease older employees to maintain their current level of functioning despite the constraints related to ageing (Bal et al., 2013; Moghimi et al., 2017). There is also evidence that the active use of SOC strategies can mediate the relationship between perceived HRM practices and work-related outcomes (Weigl et al., 2014; Bal et al., 2013; von Bonsdorff et al., 2014). For example, the study of von Bonsdorff et al., (2014) showed that the use of SOC strategies had a mediating role between perceived organisational justice and work ability among Finnish healthcare professionals. Furthermore, the study of Bal et al., (2013) reported that among those healthcare professionals who actively used selection and compensation strategies, accommodative HRM practices (such as additional leave and partial retirement) increased their organisational commitment. Thus, we hypothesise:

2.1 | H1: The active use of SOC strategies positively mediates the relationship between perceived HIWPs and organisational commitment

Along with organisational resources, differences in individual resources may influence how actively employees use SOC strategies (Moghimi et al., 2017; Zacher & Frese, 2011). For example, it has been argued that differences in career attributes, such as self-efficacy, can influence how actively individuals use SOC strategies (Moghimi et al., 2017). High career management self-efficacy can be considered as an individual's psychological resource, which can buffer the negative aspects of working life and promote the successful ageing in working life (Toppinen-Tanner et al., 2016; Vuori et al., 2012). Vuori et al., (2012, p. 274) have defined career management self-efficacy as:

confidence in one's abilities in career management activities, such as defining personal strengths and career interests, finding the means and pathways for shaping one's job and career in the self-desired direction, seeking possibilities for learning experiences at work, learning assertiveness in social relationships at work, and learning self-care.

There is evidence that nurses' self-efficacy beliefs are positively related to their self-leadership, in other words, the ability to control

one's own behaviour (Kim & Kim, 2019). Thus, we assume that career management self-efficacy can influence the use of SOC strategies, and we hypothesise the following:

2.2 | H2: The active use of SOC strategies positively mediates the association between career management self-efficacy and organisational commitment

Organisational resources, such as HIWPs, can reinforce individuals' career management self-efficacy and beliefs of self-competence (see, e.g., Battistelli et al., 2016). For instance, the study of Chênevert et al., (2016) demonstrated that perceived HIWPs were positively related to nurses' self-image, while negative work-related issues, such as negative stereotypes, can deteriorate employees' self-efficacy (Chiesa et al., 2016). Previous studies also indicate that career management self-efficacy is positively related to employees' work-related attitudes. For example, Llorens et al., (2007) study found that individuals' efficacy beliefs were positively associated with work engagement (see Vuori et al., 2012, 274), whereas Battistelli et al., (2016) showed that perceived self-competence was positively related to nurses' organisational commitment. Hence, we hypothesise that:

2.3 | H3: Career management self-efficacy positively mediates the relationship between perceived HIWPs and organisational commitment

The hypothesised relationships between perceived HIWPs, career management self-efficacy, the use of SOC strategies and organisational commitment are presented in Figure 1.

3 | METHODS

3.1 | Data collection

Quantitative survey data were used to test the hypotheses. The data were collected using a total sampling technique: a postal survey targeted all registered nurses aged 50 and above working at one Finnish university hospital (N = 962) was sent in the late part of 2016. In total, 396 employees completed surveys, representing a 41% response rate. Nursing professionals were provided written information regarding the purpose and nature of the research. Returned questionnaires were considered as informed consent to participate in the research. STrengthening the Reporting of OBservational studies in Epidemiology (STROBE), a 22-item checklist, was followed in this study (see Supplementary File 1).

3.2 | Ethical Consideration

The university's ethical committee gave the ethical approval for the study. Permission for research was given by the ethical committee of the hospital.

3.3 | Demographic characteristics of the respondents

The majority of respondents were female (90%). Respondents' demographic characteristics are presented in Table 1. Respondents' age varied from 50–69 (mean =57.0; SD =3.7). The respondents had a long career (mean =34.2; SD =6.0), organisational (mean =22.0; SD =11.5) and job tenure (mean =18.0; SD =12.1).

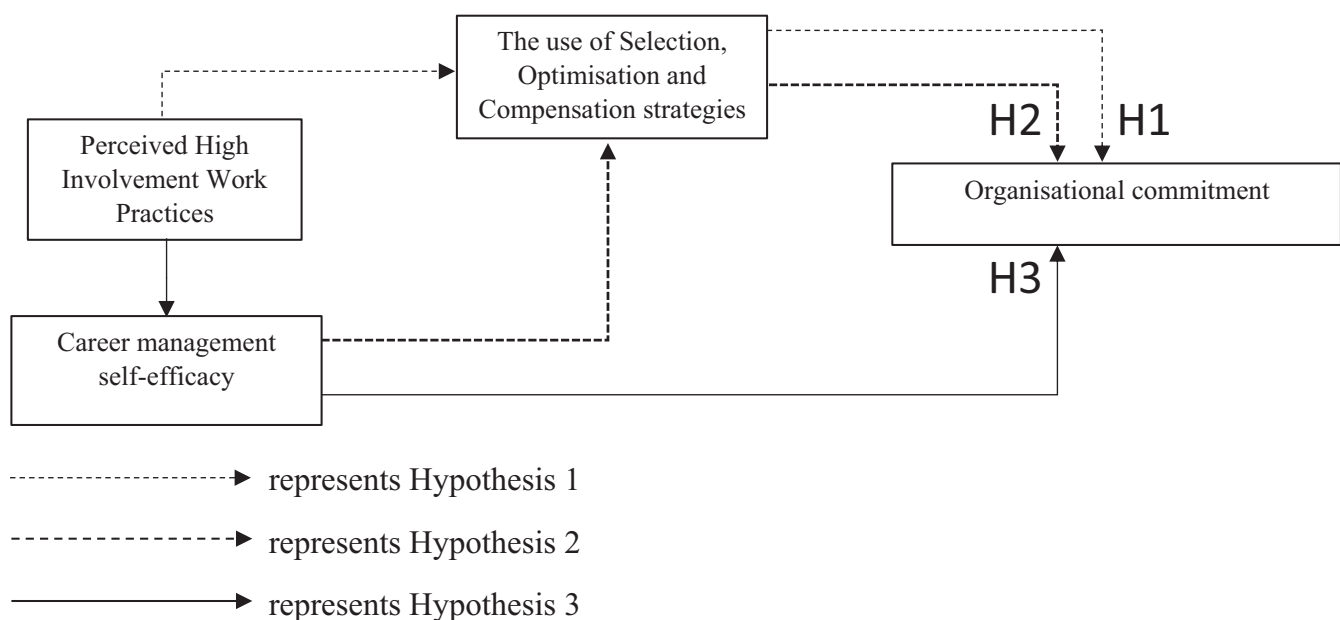


FIGURE 1 The hypothesised model

TABLE 1 Demographic characteristics of the respondents.

Demographic characteristics (% , n)	
Gender,% (n)	
Women	90 (353)
Men	10 (39)
Age, mean \pmSD	57.0 \pm 3.7
Education, % (n)	
College level or lower	78 (305)
Bachelors' degree or upper	22 (84)
Form of employment, % (n)	
Permanent (full or part-time)	93 (364)
Temporary (full or part-time)	7 (27)
Career tenure, mean \pmSD	34.2 \pm 6.0
Organisational tenure, mean \pmSD	22.0 \pm 11.5
Tenure in current job, mean \pmSD	18.0 \pm 12.1
Occupation	
Practical nurse	21 (81)
Psychiatric nurse	3 (13)
Nurse	33 (131)
Specialised nurse	15 (60)
Head nurse	10 (39)
Not reported	18 (72)
Working time, % (n)	
Regular day or night work	50 (195)
Shift work	50 (194)
Pay €/month, mean \pmSD	2843.8 \pm 1215.4

A large number of respondents worked in a permanent position (90%) and had a college-level education (78%). In terms of occupations, half of the respondents were nurses (including psychiatric and specialised nurses). Practical nurses represented 21% of the respondents and head nurses 10%. In terms of hours of work, half of the respondents had regular day or night work and the other half had shift work. The respondents' average monthly salary was around 2800 euros.

3.4 | Measures

All measures used a five-point Likert scale varying from 1) very little–5) very much. The wording of the items and anchoring of the scales are presented in Appendix 1. Harmon et al., and and's (2003) scale was applied for measuring HIWPs. In line with earlier studies (see, e.g. Müller et al., 2013; Zacher & Frese, 2011), a shortened version of the original SOC scale (Baltes et al., 1999) was used in this study. The respondents were asked to estimate to what extent the items reflect one's own situation at work. A combined score was applied for the average use of SOC strategies (see, for example, Zacher & Frese, 2011). Career management self-efficacy scale was based

on the scale developed by Vuori et al., (2012). Organisational commitment scale was a shortened version (von Bonsdorff, Zhou, Wang & Vanhala, 2014) of the original scale introduced by Porter et al., (1974). The validity and reliability of the measures were tested and discussed in the Measurement models section below.

Five variables (age, gender, shift work, work ability and perceived competencies in the current job) regarding the characteristics of the respondents were used as control variables. One question was used to measure respondents' work ability. Respondents' current work ability was measured with one question with a scale from 0–10 (0 = totally unable to work, 10 = best work ability) (Tuomi et al., 2002). This single question is part of the larger Work Ability Index (WAI), and this particular question has been demonstrated to be a reliable indicator of an individual's work ability (Tuomi et al., 2002). Perceived competencies in the current job were measured with one question regarding one's own estimation of which the following options best described his/her own competencies in their current job: 1) 'I need additional training in order to perform well in my current job'; 2) 'my skills are appropriate for my current work demands'; and 3) 'I have the potential to carry out more challenging tasks' (Lehto & Järnefelt, 2000). This question has been applied in Statistics Finland's Quality of Work Life Surveys (see, e.g., Lehto & Järnefelt, 2000).

3.5 | Analyses

Pearson's correlation analysis and the partial least-squares (PLS) method were applied to test the hypotheses (Version 3.2.7 of SmartPLS; see Ringle et al., 2015), as suggested in earlier studies (see, e.g., Hair et al., 2017). To include multiple relationships between studied phenomena and the control variables simultaneously, structural equation modelling (SEM) using PLS was deemed appropriate as the PLS algorithm is based on minimising dependent variables residual variance. It therefore makes demands that are more liberal on the study measures than alternative techniques for SEM (Echambadi et al., 2006).

3.6 | Assessment of bias

Data of this study are based on self-report measures, and thus, there might be a bias of common method variance in the findings. This kind of a common method bias (CMB) might affect when informants respond to both independent and dependent variables. We took the following steps to minimise the risk of CMB (e.g. Minbaeva et al., 2012).

First, we assured confidentiality in survey administration to lower the risk that respondents modify their answers because of the expectations of others (cf. Minbaeva et al., 2012). With the help of the practitioners in the field, the scale items were improved in order to achieve clear wording and understandable terminology to keep the survey concise (MacKenzie & Podsakoff, 2012). In addition, the possibility of CMB was further reduced so that experienced

informants assessed concrete constructs (see, e.g., MacKenzie & Podsakoff, 2012).

Moreover, we performed a statistical test to see whether CMB was a problem in our study. Following the procedure suggested by Liang et al., (2008), we tested a measurement model with the inclusion of a method factor. Thus, we allowed the items to 'load' both on their theoretical constructs and on a factor representing the common method. Item loadings on this factor were much lower compared with the loadings on the actual constructs. In addition, our analyses (see the Results section) further increase the risk of CMB by showing a high discriminant validity. Based on the above-mentioned tests, it can be expected that common method bias is not a concern in this case.

4 | RESULTS

4.1 | Correlations of the studied variables

In Table 2, mean values, standard deviations and correlations of the studied variables are demonstrated. Age was only statistically significantly correlated with perceived HIWPs. Perceived HIWPs, career management self-efficacy and organisational commitment were all positively and statistically significantly correlated with each other. The strongest positive correlations were found between perceived HIWPs and organisational commitment ($r = 0.554, p < .001$), career management self-efficacy and organisational commitment ($r = 0.440, p < .001$) and perceived HIWPs and career management self-efficacy ($r = 0.348, p < .001$).

4.2 | Measurement models

The measurement models were evaluated in terms of internal consistency and the discriminant validity.

4.3 | Internal consistency

Construct reliability (CR) and convergent validity were used to test internal consistency. For the CR, all the constructs reached the threshold of 0.70 (Bagozzi & Yi, 1991; see Appendix 1). The CR for the high-involvement work practices (HIWPs) was 0.90; for the career management self-efficacy, 0.91; for the selection, optimisation and compensation (SOC) strategies, 0.84; and for the organisational commitment, 0.89. For the convergent validity, we studied three issues: CR, factor loadings and average variance extracted (AVE). First, in addition to the above-mentioned values for CRs, all items had high loadings and were statistically significant to the related constructs verifying the posited relationships. The mean value for loadings was as follows: HIWPs, 0.72; career management self-efficacy, 0.72; SOC strategies, 0.64; and organisational commitment, 0.78. The significance level of all loadings is less than 0.005. Second, in most of the constructs, the measure of AVE met the cut-off value 0.50 (see, e.g., Fornell & Larcker, 1981): HIWPs, 0.52; career management self-efficacy, 0.53; and organisational commitment, 0.62. Though, it fell just short for the measure of SOC strategies being 0.45. However, when all the aspects are accounted for (i.e. high and statistically significant factor loadings), this measure is also applicable in terms of convergent validity.

4.4 | Discriminant validity

Discriminant validity indicates whether the constructs are different from the others. In its assessment, the shared variance between the one specific construct and the other constructs (i.e. the correlation) should be less than square root of AVE (Fornell & Larcker, 1981). In this study, this condition was fulfilled by all the constructs (see Table 3). The square root of AVEs (presented in diagonal) was greater than off-diagonally presented correlations.

Variables	Mean	SD	1	2	3	4
1 Age	57.01	3.69				
2 Perceived high-involvement work practices	3.45	0.65	.104 [*] (n = 385)			
3 Career management self-efficacy	3.87	0.55	.017 (n = 378)	.348 ^{**} (n = 378)		
4 The use of selection, optimisation and compensation strategies	3.70	0.52	-.016 (n = 379)	.182 ^{**} (n = 378)	.286 ^{**} (n = 371)	
5 Organisational commitment	3.59	0.74	.091 (n = 379)	.554 ^{**} (n = 378)	.440 ^{**} (n = 372)	.287 ^{**} (n = 374)

TABLE 2 Means, standard deviations and Pearson's correlations of studied variables.

* $p < 0.05$; ** $p < 0.01$.

TABLE 3 Discriminant validity.

Construct	1	2	3	4
1 Perceived high-involvement work practices	0.72			
2 Career management self-efficacy	0.35	0.73		
3 The use of selection, optimisation and compensation strategies	0.18	0.29	0.67	
4 Organisational commitment	0.55	0.44	0.29	0.79

Notes: The square root of AVE associated with the construct is presented diagonally. Correlations between the constructs are presented in the lower left triangle.

TABLE 4 Testing the research model.

Path	
<i>Control variables</i>	
Age organisational commitment	0.042 (0.144)
Genderorganisational commitment	-0.005 (0.454)
Form of working hours organisational commitment	0.026 (0.260)
Perceived competencies in the current job organisational commitment	-0.055 (0.095)
Workabilityorganisational commitment	0.083 (0.059)
<i>Mediating variables</i>	
The use of selection, optimisation and compensation strategiesorganisational commitment	0.161 (0.000)
Career management self-efficacyorganisational commitment	0.212 (0.000)
<i>Independent variables</i>	
Perceived high-involvement work practices the use of selection, optimisation and compensation strategies	0.085 (0.053)
Perceived high-involvement work practices career management self-efficacy	0.342 (0.000)
Perceived high-involvement work practices organisational commitment	0.437 (0.000)
Career management self-efficacythe use of selection, optimisation and compensation strategies	0.295 (0.000)
R^2 for use of selection, optimisation and compensation strategies	0.111
R^2 for career management self-efficacy	0.117
R^2 for organisational commitment	0.416

Notes: p values for statistical significance are reported in parentheses.

Moreover, discriminant validity was tested by means of the Heterotrait-Monotrait ratio (HTMT) following the procedure by Hair et al., (2017). The results showed that the HTMT values for all pairs of constructs were under the threshold value of 0.90. Moreover, based on a computed bootstrapping procedure, all HTMT values were significantly different from 1. These results give additional support for the discriminant validity.

In sum, the model assessments provided good evidence of the validity and reliability of concept operationalisation.

4.5 | Testing the research model

To test the research model, a path model reflecting the posited relationships between perceived HIWPs, career management self-efficacy, the use of SOC strategies, organisational commitment and control variables was estimated. As Table 4 shows, our model explains 11% of the variance in SOC, 12% of the variance in career management self-efficacy and 42% of the variance in commitment.

The results show (see Table 4 and Figure 2) that the use of SOC strategies acts as a partial mediator in the associations between perceived HIWPs and organisational commitment and between career management self-efficacy and organisational commitment. In addition, also career management self-efficacy works as a partial mediator between perceived HIWPs and organisational commitment. Thus, the effect of both perceived HIWPs and career management self-efficacy to organisational commitment has a direct effect and a partial effect through increased usage of SOC strategies. Moreover, also perceived HIWPs affect organisational commitment both directly and indirectly via career management self-efficacy.

More specifically, as suggested in Hypothesis 1, the path from perceived HIWPs to organisational commitment goes via SOC: the path from perceived HIWPs to SOC = 0.085 ($p = 0.053$) and from SOC to organisational commitment = 0.161 ($p = 0.000$). However, there is also a direct effect from perceived HIWPs to organisational commitment ($\beta = 0.437$, $p = 0.000$). The results regarding our Hypothesis 2 claiming that the use of SOC strategies mediates the effect of career management self-efficacy to organisational commitment were alike. Again, in addition to the mediation effect of SOC (career management self-efficacy to SOC, $B = 0.295$, $p = 0.000$; SOC to organisational commitment $\beta = 0.161$, $p = 0.000$) there was also a direct effect ($\beta = 0.212$, $p = 0.000$). This was also the case in our Hypothesis 3. As suggested, career management self-efficacy mediates the relationships between perceived HIWPs and organisational commitment: the path from perceived HIWPs to career management self-efficacy 0.342 ($p = 0.000$) and from career management self-efficacy to organisational commitment 0.212 ($p = 0.000$). However, again there was also a direct effect of perceived HIWPs to organisational commitment ($\beta = 0.437$, $p = 0.000$).

In sum, the current findings revealed that the active use of SOC strategies partially mediated the association between career management self-efficacy and organisational commitment. In addition, career management self-efficacy partially mediated perceived

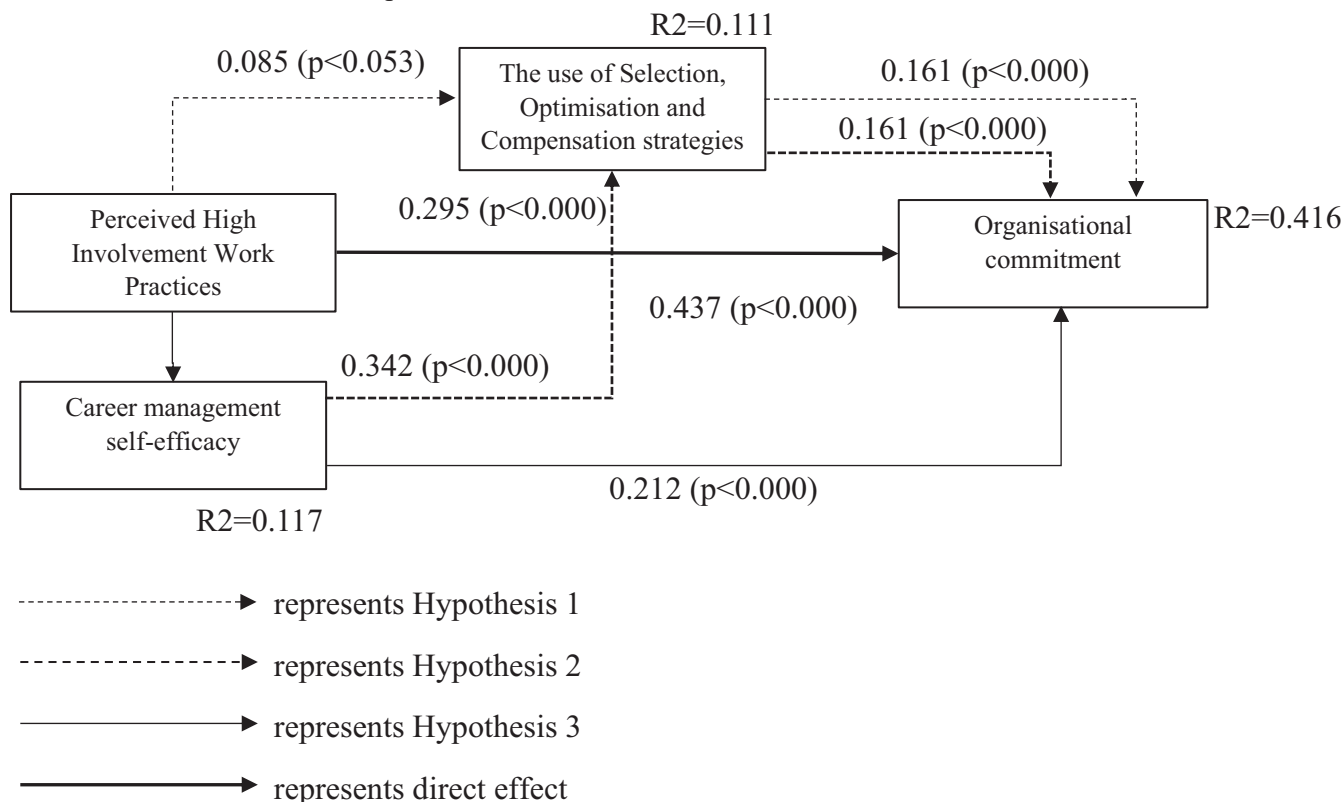


FIGURE 2 Results (control variables are omitted for clarity reasons)

HIWPs and organisational commitment. We found support for all main effects, which were not hypothesised here due to brevity.

5 | DISCUSSION

This study investigated the antecedents of organisational commitment among older nursing professionals by focusing on both organisational and individual resources. Although few recent studies (e.g. Bal et al., 2013; Kooij et al., 2014; Müller et al., 2018) have applied the SOC theory when studying the role of HRM practices for the retention of older employees, individuals' career management self-efficacy has not been acknowledged in those studies. Thus, this study deepened the theoretical understanding by integrating organisational and individual resources and the use of SOC strategies into the discussion of retaining older nursing professionals. The results indicate that perceived HIWPs as organisational resources, career management self-efficacy as an individual resource and the active use of SOC strategies had all a positive contribution on older nursing professionals' organisational commitment.

Our first hypothesis provided only partial, cautious support for previous studies regarding the mediating role of SOC strategies between perceived HIWPs and a work-related attitude (Bal et al., 2013; von Bonsdorff et al., 2014; Weigl et al., 2014). In other words, among the studied older nursing professions, perceived HIWPs were positively associated with both the active use of SOC strategies and organisational commitment. But, the mediating role of SOC strategies

between perceived HIWPs and organisational commitment was not confirmed. This result underlines that HR practices can be used to support older nursing professionals' abilities to actively use SOC strategies and thereby successfully cope in their work during the late-career phase (e.g. Müller et al., 2018). Our second and third hypotheses were partially supported. The use of SOC strategies had a partial mediating role in the association between career management self-efficacy and organisational commitment. This indicates that older nursing professionals with high career management self-efficacy can actively use their SOC strategies and are also more committed to their organisation. Also, in the study of Müller *et al.* (2018b) a positive correlation was found between nurses' self-efficacy beliefs and the acquisition of SOC behaviours. However, in their study, no moderation effect of self-efficacy on the relationship between occupational interventions and the acquisition of SOC behaviours was found. In our study, career management self-efficacy partially mediated the association between perceived HIWPs and organisational commitment. This implies that HIWPs as organisational resources can reinforce individuals' career management self-efficacy (Battistelli et al., 2016) and thereby also organisational commitment.

In sum, our findings provide support for previous studies on the retention of nursing professionals, which have stressed the importance of being able to influence one's own work (e.g. Kim & Kim, 2019; Seitovirta et al., 2016). In the context of the ageing nursing workforce, our results indicate that healthcare organisations can use HIWPs to strengthen older nursing professionals' organisational commitment. In addition, HIWPs can be applied to facilitate older

nursing professionals' abilities to actively use different SOC strategies, such as choosing adequate work-related goals, finding alternative ways to do their work and maintaining their current level of functioning (Müller et al., 2018). The active use of SOC strategies can be seen to be particularly important to the nursing profession due to the physically and mentally demanding nature of the work (Müller et al., 2018; Weigl et al., 2013). In addition, HIWPs may enhance older nursing professionals' career management self-efficacy beliefs, which is crucial for the successful ageing at work (Müller et al., 2018; Vuori et al., 2012).

6 | LIMITATIONS

The self-reported survey data were limited to older Finnish nursing professionals working in one hospital. Due to the cross-sectional study setting, we cannot study causality among the focal variables. Based on our theoretical framework, we assumed that perceived HIWPs, career management self-efficacy and the active use of SOC strategies influenced employees' organisational commitment. In the future, the causal order of the studied variables and the possibility of positive and mutually reinforcing spirals between organisational and personal resources and organisational commitment should be investigated.

7 | CONCLUSIONS

Our results demonstrated that both organisational (HIWPs) and individual (career management self-efficacy) resources along with the active use of SOC strategies were positively associated with older nursing professionals' organisational commitment. Thereby, we highlight the importance of the interdependence of both organisational and individual resources and the active use of SOC strategies during the late-career phase (e.g. Jung & Takeuchi, 2018).

8 | RELEVANCE FOR CLINICAL PRACTICE

This study shed light into the significance of organisational and individual resources and the use of SOC strategies for older nursing professionals' organisational commitment. This study demonstrated that both organisational (HIWPs) and individual (career management self-efficacy) resources and the active use of SOC strategies were positively and significantly associated with each other and that they also had a positive influence on the organisational commitment of older nursing professionals. Thereby, it can be argued that retaining older nursing professionals in healthcare organisations requires that attention is paid to both organisational and individual resources. Examples of organisational practices facilitating older nursing professionals' abilities to continue working until retirement age are, for example, flexible work time arrangements and job modifications (Merkel et al., 2019). Similar kinds of organisational practices

enhance also older nursing professionals' abilities to actively use SOC strategies at work. Furthermore, nursing managers need to be aware of the importance of career management self-efficacy for older nurses during the late-career phase.

CONFLICT OF INTEREST

No conflict of interest declared by the authors.

AUTHOR CONTRIBUTIONS

Study design: Hanna Salminen; data interpretation: Hanna Salminen; drafting of the manuscript: Hanna Salminen; revision of the manuscript: Hanna Salminen; funding acquisition: Monika von Bonsdorff; data collection: Monika von Bonsdorff; design of the present study: Monika von Bonsdorff; data interpretation and revision of the article critically for important intellectual content: Monika von Bonsdorff, Deborah McPhee, Merja Miettinen; statistical analysis: Mika Vanhala; and data interpretation: Mika Vanhala.

ORCID

Hanna Salminen  <https://orcid.org/0000-0001-7298-9821>

REFERENCES

- Bagozzi, R. P., & Yi, Y. (1991). Multitrait-multimethod matrices in consumer research. *Journal of Consumer Research*, 17(4), 426–439. <https://doi.org/10.1086/208568>.
- Bal, P. M., & De Lange, A. H. (2015). From flexibility human resource management to employee engagement and perceived job performance across the lifespan: A multisample study. *Journal of Occupational and Organizational Psychology*, 88, 126–154. <https://doi.org/10.1111/joop.12082>.
- Bal, P. M., Kooij, D. T. A. M., & De Jong, S. B. (2013). How do developmental and accommodative HRM enhance employee engagement and commitment? The role of psychological contract and SOC strategies. *Journal of Management Studies*, 50, 545–572. <https://doi.org/10.1111/joms.12028>.
- Baltes, P. B., & Carstensen, L. L. (1996). The process of successful ageing. *Ageing and Society*, 16, 397–422. <https://doi.org/10.1017/S0144686X00003603>.
- Baltes, P. B., Staudinger, U. M., & Lindenberger, U. (1999). Life-span psychology: theory and application to intellectual functioning. *Annual Review of Psychology*, 50, 417–507. <https://doi.org/10.1146/annurev.psych.50.1.471>.
- Bandura, A. (1997). *Self-efficacy: The Exercise of Control*. Freeman.
- Battistelli, A., Galletta, M., Vandenberghe, C., & Odoardi, C. (2016). Perceived organisational support, organisational commitment and self-competence among nurses: a study in two Italian hospitals. *Journal of Nursing Management*, 24, E44–E53. <https://doi.org/10.1111/jonm.12287>.
- Boxall, P., & Macky, K. (2009). Research and theory on high-performance work systems: progressing the high involvement stream. *Human Resource Management Journal*, 19(1), 3–23. <https://doi.org/10.1111/j.1748-8583.2008.00082.x>.
- Chand, M., & Markova, G. (2018). The European Union's aging population: Challenges for human resource management. *Thunderbird International Business Review*, 1–11. <https://doi.org/10.1002/tie.22023>.
- Chênevert, D., Jourdain, G., & Vandenberghe, C. (2016). The role of high-involvement work practices and professional self-image in nursing recruits' turnover: A three-year prospective study. *International Journal of Nursing Studies*, 53, 73–84. <https://doi.org/10.1016/j.ijnurstu.2015.09.005>.

- Chiesa, R., Toderi, S., Dordoni, P., Henkens, K., Fiabane, E. M., & Setti, I. (2016). Older workers: stereotypes and occupational self-efficacy. *Journal of Managerial Psychology*, 31(7), 1152–1166. <https://doi.org/10.1108/JMP-11-2015-0390>.
- Echambadi, R., Campbell, B., & Agarwal, R. (2006). Encouraging best practice in quantitative management research: an incomplete list of opportunities. *Journal of Management Studies*, 43(8), 1801–1820. <https://doi.org/10.1111/j.1467-6486.2006.00660.x>.
- Tuomi, K., Ilmarinen, J., Jahkola, A., Katajarinne, L., & Tulkki, A. (2002). *Work Ability Index. 2nd revised edition. Occupational Health Care No. 19.* Helsinki: Finnish Institute of Occupational Health.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50. <https://doi.org/10.2307/3151312>.
- Foster, L., & Walker, A. (2013). Gender and active ageing in Europe. *European Journal of Ageing*, 10(1), 3–10. <https://doi.org/10.1007/s10433-013-0261-0>.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*, 2nd ed. Sage Publications.
- Harmon, J., Scotti, D. J., Behson, S., Farias, G., Petzel, R., Neuman, J. H., & Keashly, L. (2003). Effects of high-involvement work systems on employee satisfaction and service costs in veteran healthcare. *Journal of Healthcare Management*, 48(6), 393–404.
- Hisel, M. E. (2019). Measuring work engagement in a multigenerational nursing workforce. *Journal of Nursing Management*, 28(2), 294–305. <https://doi.org/10.1111/jonm.12921>.
- Jung, Y., & Takeuchi, N. (2018). A lifespan perspective for understanding career self-management and satisfaction: The role of developmental human resource practices and organizational support. *Human Relations*, 71(1), 73–102. <https://doi.org/10.1177/0018726717715075>.
- Kehoe, R. R., & Wright, P. M. (2013). The impact of high-performance human resource practices on employees' attitudes and behaviors. *Journal of Management*, 39(2), 366–391. <https://doi.org/10.1177/0149206310365901>.
- Kim, H., & Kim, K. (2019). Impact of self-efficacy on the self-leadership of nursing preceptors: The mediating effect of job embeddedness. *Journal of Nursing Management*, 27, 1756–1763. <https://doi.org/10.1111/jonm.12870>.
- Kooij, D. T. A. M., Guest, D. E., Clinton, M., Knight, T., Jansen, P. G. W., & Dikkers, J. S. E. (2013). How the impact of HR practices on employee well-being and performance changes with age. *Human Resource Management Journal*, 23(1), 18–35. <https://doi.org/10.1111/1748-8583.12000>.
- Kooij, D. T. A. M., Jansen, P. G. W., Dikkers, J. S. E., & de Lange, A. H. (2014). Managing aging workers: a mixed methods study on bundles of HR practices for aging workers. *The International Journal of Human Resource Management*, 25(15), 2192–2212. <https://doi.org/10.1080/09585192.2013.872169>.
- Kwok, C., Bates, K. A., & Ng, E. (2016). Managing and sustaining an ageing nursing workforce: identifying opportunities and best practices within collective agreements in Canada. *Journal of Nursing Management*, 24, 500–511. <https://doi.org/10.1111/jonm.12350>.
- Lehto, A.-M., & N. Järnefelt (Eds.) (2000). *Jaksaen ja joustaen. Artikkeleita työolotutkimuksesta. [Managing and Bending. Essays of the Working Conditions]*. Statistics Finland.
- Liang, H., Saraf, N., Hu, Q., & Zue, Y. (2008). Assimilation of enterprise systems: The effect of institutional pressures and the mediating role of top management. *MIS Quarterly*, 31, 59–87. <https://doi.org/10.2307/25148781>.
- Llorens, S., Schaufeli, W. B., Bakker, A., & Salanova, M. (2007). Does a positive gain spiral of resources, efficacy beliefs and engagement exist? *Computers in Human Behavior*, 23, 825–841. <https://doi.org/10.1016/j.chb.2004.11.012>.
- MacKenzie, S. B., & Podsakoff, P. M. (2012). Common method bias in marketing: Causes, mechanisms, and procedural remedies. *Journal of Retailing*, 88, 542–555. <https://doi.org/10.1016/j.jretai.2012.08.001>.
- Merkel, S., Ruokolainen, M., & Holman, D. (2019). Challenges and practices in promoting (ageing) employees working career in the health care sector – case studies from Germany, Finland and the UK. *BMC Health Services Research*, 19, 918. <https://doi.org/10.1186/s12913-019-4655-3>.
- Minbaeva, D., Mäkelä, K., & Rabbiosi, L. (2012). Linking HRM and knowledge transfer via individual-level mechanisms. *Human Resource Management*, 51, 387–405. <https://doi.org/10.1002/hrm.21478>.
- Moghimi, D., Zacher, H., Scheibe, S., & Van Yperen, N. W. (2017). The selection, optimisation, and compensation model in the work context: A systematic review and meta-analysis of two decades of research. *Journal of Organizational Behavior*, 38, 247–275. <https://doi.org/10.1002/job.2108>.
- Müller, A., Angerer, P., Becker, A., Gantner, M., Gündel, H., Heiden, B., Herbig, B., Herbst, K., Poppe, F., Schmook, R., & Maatouk, I. (2018). Bringing successful aging theories to occupational practices: Is selective optimization with compensation trainable? *Work, Aging and Retirement*, 4(2), 161–174.
- Müller, A., De Lange, A., Weigl, M., Oxfart, C., & Van der Heijden, B. (2013). Compensating losses in bridge employment? Examining relationships between compensation strategies, health problems, and intentions to remain at work. *Journal of Vocational Behavior*, 83, 68–77. <https://doi.org/10.1016/j.jvb.2013.03.002>.
- Müller, A., Weigl, M., Heiden, B., Herbig, B., Glaser, J., & Angerer, P. (2013). Selection, optimization, and compensation in nursing: Exploration of job-specific strategies, scale development, and age-specific associations to work ability. *Journal of Advanced Nursing*, 69(7), 1630–1642. <https://doi.org/10.1111/jan.12026>.
- OECD (2019). *Health at a Glance 2019: OECD Indicators*, OECD Publishing, Paris. Retrieved from <http://www.oecd.org/health/health-systems/health-at-a-glance-19991312.htm> / Accessed September 13, 2020.
- OECD (2019). *Pensions at a Glance 2019: OECD and G20 Indicators*, OECD Publishing, Paris. Retrieved from 2020, <https://doi.org/10.1787/b6d3dcfc-en> / Accessed September 13.
- Oostrom, J. K., Pennings, M., & Bal, P. M. (2016). How do idiosyncratic deals contribute to the employability of older workers? *Career Development International*, 21(2), 176–192. <https://doi.org/10.1108/CDI-08-2015-0112>.
- Perreira, T. T., Berta, W., & Herbert, M. (2018). The employee retention triad in health care: Exploring relationships amongst organizational justice, affective commitment and turnover intention. *Journal of Clinical Nursing*, 27(7–8), e1451–e1461. <https://doi.org/10.1111/jocn.14263>.
- Pool, I. A., Poell, R. F., Berings, M. G. M. C., & ten Cate, O. (2015). Strategies for continuing professional development among younger, middle-aged, and older nurses: A biographical approach. *International Journal of Nursing Studies*, 5, 939–950. <https://doi.org/10.1016/j.ijnurstu.2015.02.004>.
- Porter, L. W., Steers, R. M., Mowday, R. T., & Boulian, P. V. (1974). Organisational commitment, job satisfaction and turnover among psychiatric technicians. *Journal of Applied Psychology*, 59(5), 603–609. <https://doi.org/10.1037/h0037335>.
- Ringle, C. M., Wende, S., & Becker, J. (2015). *SmartPLS 3*. SmartPLS GmbH.
- Salmela-Aro, K., Mutanen, P., & Vuori, J. (2012). Promoting career preparedness and intrinsic work-goal motivation: RCT intervention. *Journal of Vocational Behavior*, 80, 67–75. <https://doi.org/10.1016/j.jvb.2011.07.001>.
- Seitovirta, J., Vehviläinen-Julkunen, K., Mitronen, L., De Gieter, S. & Kvist, T., (2016). Attention to nurses' rewarding – an interview study of registered nurses working in primary and private healthcare in

- Finland. *Journal of Clinical Nursing*, 26(7-8), 1042-1052. <https://doi.org/10.1111/jocn.13459>.
- Toppinen-Tanner, S., Böckerman, P., Mutanen, P., Martimo, K.-P., & Vuori, J. (2016). Preventing sickness absence with career management intervention. A randomized controlled field trial. *Journal of Occupational and Environmental Medicine*, 58(12), 1202-1206. <https://doi.org/10.1097/JOM.0000000000000887>.
- Von Bonsdorff, M. E., Janhonen, M., Zhou, Z. E., & Vanhala, S. (2014). Team autonomy, organizational commitment and company performance – a study in the retail trade. *The International Journal of Human Resource Management*, 26(8), 1098-1109. <https://doi.org/10.1080/09585192.2014.934881>.
- Von Bonsdorff, M. E., von Bonsdorff, M. B., Zhou, Z. E., Kauppinen, M., Miettinen, M., Rantanen, T., & Vanhala, S. (2014). Organizational justice, selection, optimization with compensation, and nurses work ability. *Journal of Occupational & Environmental Medicine*, 56(3), 326-330. <https://doi.org/10.1097/JOM.0000000000000102>.
- 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*, 44(8), 3124-3150. <https://doi.org/10.1177/0149206316662314>.
- Vuori, J., Toppinen-Tanner, S., & Mutanen, P. (2012). Effects of resource-building group intervention on career management and mental health in work organizations: Randomized controlled field trial. *Journal of Applied Psychology*, 97(2), 273-286. <https://doi.org/10.1037/a0025584>.
- Weigl, M., Müller, A., Hornung, S., Leidenberger, M., & Heiden, B. (2014). Job resources and work engagement: the contributing role of selection, optimization, and compensation strategies at work. *Journal for Labour Market Research*, 47, 299-312. <https://doi.org/10.1007/s12651-014-0163-4>.
- Zacher, H., & Frese, M. (2011). Maintaining a focus on opportunities at work: The interplay between age, job complexity, and the use of selection, optimization, and compensation strategies. *Journal of Organizational Behavior*, 32, 291-318. <https://doi.org/10.1002/job.683>.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section.

How to cite this article: Salminen H, von Bonsdorff M, Vanhala M, McPhee D, Miettinen M. Organisational and individual resources as antecedents of older nursing professionals' organisational commitment: Investigating the mediating effect of the use of selection, optimisation and compensation strategies. *J Clin Nurs*. 2021;00:1-11. <https://doi.org/10.1111/jocn.15785>