



Sustainable Employability of Teaching Staff Members? A Multiple-Group Path Analysis of the Role of Age, Self-directed Learning Orientation and Job Characteristics for Employability

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Abstract

Education is one sector being challenged by aging staff, as well as by increased pressure to innovate. In order to cope with these challenges, educational institutions require teaching staff members, who include teachers, support staff and managers, to show a high level of employability. In this survey-based study, the predictive value of quantitative and qualitative job demands, job autonomy and self-directed learning orientation for three employability competences (occupational expertise, personal flexibility, anticipation and optimization) was investigated using a Dutch sample ($N=3139$). Moreover, three teaching staff age groups were compared: < 35 years old (young), 35–50 years old (middle-aged), and > 50 years old (senior). Path analysis results showed that self-directed learning orientation was positively associated with the three employability competences across all three different age groups. Positive relationships across age groups were also found between quantitative job demands and occupational expertise, and between qualitative job demands and personal flexibility. In addition, multi-group comparisons revealed age differences in our model relationships. The relationship between self-directed learning orientation, on the one hand, and personal flexibility and anticipation and optimization on the other, was stronger for seniors in comparison with the young employees. For the young employees, the role of autonomy was more important in enhancing their occupational expertise. Implications for school principals and HRD managers are discussed. Promoting a self-directed learning orientation and custom-made workplaces that take into account age differences among teaching staff members appear to be key for protecting and enhancing sustainable employability.

Keywords Employability · Educational sector · Age · Job characteristics · Personal agency · Self-directed learning

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Introduction

During the past decades, the importance of workplace learning was discussed by many scholars in different domains (Puhakka et al., 2021). Different factors have influenced the recent increased attention for facilitating and stimulating employee's professional development. First, two simultaneous demographic changes have increased the percentage of older workers in European workplaces, including schools (Calo, 2008; Jensen, 2018). Specifically, the relatively high birth rate from the 1940's till the 1960's together with the current changes in retirement policies that have led to longer working careers have resulted in an aging workforce (Philips & Siu, 2012). This has pushed organisations to develop policies and implement learning and development practices that encourage older workers to continue working in a motivated, happy, productive and healthy way (Van der Heijden, 2005; Froehlich et al., 2015; De Vos et al., 2020; Van der Heijden et al., 2020), thereby contributing to the accomplishment of organisational objectives (Kooij & Van de Voorde, 2014). Second, technological and knowledge advancements as well as increased global competition have put the issue of innovation and therefore workplace learning high on the agendas of organisations (López-Nicolás & Meroño-Cerdán, 2011).

The aging workforce combined with the increasing pace of innovations is a true challenge for organisations, including those in the educational sector. Within this context, politicians as well as employers have been discussing the utmost importance of an employable workforce for dealing with this challenge. Employability has also received increased research interest over the past two decades. Employability is commonly understood as the individual's potential in the internal and/or external labour market (Van Harten et al., 2022, p. 145). Different approaches to its conceptualisation have been taken (Römgens et al., 2020).

Since the mid-1950s, and in multiple disciplines, such as work and organisational psychology, human resource management, and career studies, employability has referred to an individual's potential in the labour market (Fugate et al., 2021). Depending on the strand taken, this potential is defined in terms of *personal strengths* that increase the individual's potential, in terms of *self-perceived employment opportunities*, or in terms of *job transitions* as a realization of this potential (see Van Harten et al., 2022 for more detailed information on the strands). In line with the first strand, we opt for a competency-based approach to employability that identifies competences at the level of the individual (Römgens et al., 2020). Employability is seen here in terms of personal strengths that promote the individual's employment potential (Van Harten et al., 2022). Personal strengths include both competences and dispositions, but we decided to focus solely on competences as these are amenable to a learning process.

Employability has been high on the agenda of organisations in many sectors, especially those confronted with a rapid pace of innovations (Fröhlich et al., 2019). Education is one sector that is challenged by a rapidly aging staff, as well as increased pressure to innovate (Van der Heijden & Bakker, 2011). In particular, nowadays, schools must cope with the growing diversity of the student population,

school reforms, technological advancements, and the continual pressure of the labour market to deliver well-prepared graduates (Donald et al., 2018). Therefore, they need teaching staff, including teachers, support staff and managers, who are highly employable, shown as considerable expertise, flexibility and the capacity to anticipate and react to a variety of changes (Vermunt & Endedijk, 2011). Although scholars already argued that employability of teaching staff is a cornerstone for high-quality classroom instruction and student achievement (Cohen & Hill, 2000; Gerritsen et al., 2017), there is a considerable lack of empirical research in this field (Lecat et al., 2018; De Grip et al., 2004). Studies on the employability of workers in the educational sector are even more necessary insofar as teaching staff members often have horizontal careers, while also having to deal with a wide variety of challenges. Therefore, continual development of employability competences is – unlike in other sectors—less directed towards career transitions, but is more oriented towards developing and maintaining a healthy and resilient career. By having a healthy and resilient career, teaching staff also serve as a role model for students as far as taking care of their future employability (Vangrieken et al., 2015). Therefore, this contribution adopts a Human Resource Development perspective (HRD) in pursuing two research aims that are deemed relevant for research and practice in the educational field. By mobilising concepts that have mostly been developed in the HRD literature, we might discover new avenues for supporting teaching staff's professional development and sustainable employability.

Our first aim is to examine predictors of teaching staff members' employability. Accordingly, building upon earlier research showing the importance of professional learning for enhancing workers' employability (Gijbels et al., 2012; Froehlich et al., 2014a; Van der Heijden et al., 2016; Poell, 2017), in this study, we take a learning perspective in investigating both work environment and individual factors that might influence teaching staff members' employability.

More specifically, at the organisational level, the learning potential of the work environment plays an important role. In particular, the characteristics of the employee's job in terms of job demands and job autonomy appear to determine the quality of learning at the workplace (Raemdonck et al., 2012a), and were found to be positively associated with the employee's sustainable employability (Van der Heijden et al., 2015, 2016).

As regards the level of the individual employee, a positive attitude towards continuing learning, which requires an orientation towards self-direction, is needed as well. Raemdonck et al. (2014a) demonstrated that a self-directed learning orientation is indeed positively related to workplace learning behaviour. While self-directedness in learning has already been studied as an important predictor for employability (see, for instance, Raemdonck et al., 2012b; Van Vuuren et al., 2011), to the best of our knowledge, no empirical work on this has been done that is specifically situated in an educational setting. However, this sector is important to examine, as it faces a combination of exceptional challenges such as high attrition rates, horizontal careers and a broad variety and fast pace of innovations.

Our second aim is to investigate the role of age, in order to respond to calls for more evidence-based research dealing with what is called the learning over the lifespan perspective. In doing so, we take into account a sustainable career

perspective (De Vos et al., 2020; Van der Heijden et al., 2020), which implies that careers are approached from the *individual perspective*, with the teaching staff member as the central career actor in our case. However, by incorporating a *multiple-stakeholder perspective* (cf. Colakoglu et al., 2006) as well, situational constraints and opportunities within the individual's work context that affect their attitudes and behaviours (Johns, 2006) are taken into account as well. In addition, sustainable careers comprise a *dynamic process*, as factors related to both the person and their context change over the lifespan, thereby affecting the sustainability of their career. In particular, based on earlier empirical research demonstrating a relatively low degree of individual employability for older workers in the educational sector (De Grip et al., 2004), we will focus on the possible moderating role of age in the different relationships under study. The distinction between young, middle-aged and senior employees is often based on the employees' chronological or calendar age (Bal et al., 2014; De Lange et al., 2010). Although the cut-off point between the different age groups is not fixed in the scholarly literature in this field, in line with Van der Heijden (2010), we differentiated between three age categories: young (< 35 years old), middle-aged (35–50 years old), and senior (> 50 years old). The category of employees 35–50 years old corresponds more or less to a category that is often termed 'mid-career' (Van der Heijden, 2010; Jansen, 1992). To our knowledge, this is the first study testing the validity of a model including job autonomy, job demands and self-directed learning orientation, on the one hand, and employability competences on the other, for three age categories, reflecting the lifespan of teaching staff. In sum, using a Dutch sample of teaching staff members, we will examine the prevalence of age differences in the level of job demands, job autonomy, and self-directed learning orientation, which are the predictors, and three indicators of employability (occupational expertise, personal flexibility, and anticipation and optimization) as the outcomes), as well as possible differences in the strength in the relationships across the identified age groups.

Our outcomes have practical implications for the management of workplace learning across different age groups of workers in the educational sector, and may guide systematic career management policies and practices. As employability has high predictive power for both objective and subjective career success (Van der Heijde & Van der Heijden, 2006; Van der Heijden et al., 2009), this study may provide principals and Human Resource Development (HRD) managers in higher education with evidence-based developmental advice on how to protect and enhance teaching staff members' employability across age groups. Moreover, the research model in this study might inspire employability scholars to measure age differences in job autonomy, job demands and self-directed learning orientation in order to develop a more fine-grained understanding of predictors of employability in a variety of sectors. By also taking into account job design characteristics, representing the contextual dimension of employability, as well as age groups, we argue for a broader conceptualisation of employability, which includes both the job- and the age-dependent character of this concept. In this way, we contribute to the broader employability literature which predominantly defines employability as an individual's agentic potential (Van Harten et al., 2022).

Theoretical Framework

A Competence-Based Approach to Employability

In this article focusing on teaching staff members, we will consider employability from the perspective of the individual employee, and we will take a competence-based approach to that concept, given the focus on sustainable employability in fast-evolving but horizontal careers. Within this approach, employability is defined as: ‘continuously fulfilling, acquiring or creating work through the optimal use of competences’ (Van der Heijde & Van der Heijden, 2006, p. 453). The domain-independent conceptualisation by Van der Heijde and Van der Heijden (2006) consists of five dimensions, namely, (a) occupational expertise (domain-specific knowledge and skills), combined with four generic competences: (b) personal flexibility, meaning that one has the capacity to adapt easily to all kinds of changes in the internal and external labour market that do not pertain to one’s immediate job domain; (c) anticipation and optimization, that is, preparing for and adapting to future changes in a personal and creative manner and striving for the best possible results; (d) corporate sense, or one’s participation and performance in different work groups, such as organisations, teams, occupational communities and other networks; and (e) balance, which means compromising between opposing employers’ interests as well as one’s own (employee) opposing work, career, and private interests (Van der Heijde & Van der Heijden, 2006).

Given the current high demands and limited vertical internal and external career mobility in the teaching profession, there is a need for knowledgeable and flexible teaching staff. Being both knowledgeable and flexible will support teachers in developing resilience for a sustainable career (Evers, 2012; Rasku-Puttonen et al., 2004). For these reasons, this empirical study will focus only upon the following three dimensions: *occupational expertise*, which is a domain-related competence, and two flexibility-related dimensions, namely, *personal flexibility* and *anticipation and optimization*, which are perceived to be more generic employability dimensions (Van der Heijde & Van der Heijden, 2006). Personal flexibility is reactive and adaptive in nature, while the dimension of anticipation and optimization is a proactive and creative form of flexibility.

Occupational expertise refers to ‘professional knowledge and skills, including meta-cognitive ones and social recognition by important key figures’ (Van der Heijden et al., 2015, p. 2). Along with a high degree of knowledge and skills related to a particular professional domain, experts ought to be seen and labelled as high performers and excellent professionals by key figures in their work environment, in order to have a sound basis for employability enhancement (Van der Heijde & Van der Heijden, 2006). *Personal flexibility* encompasses adaptation to different kinds of changes in the internal and external labour market, and refers not only to changes at the job level and within the organisation, but also to transitions between jobs and between organisations. That is to say, employees with a high amount of personal flexibility are more open to changes and are better able to exploit new opportunities (Van der Heijde & Van der Heijden, 2006, Van der Heijden et al., 2009).

Anticipation and optimization refers to preparing for future changes in a personal, creative, innovative way, and thereby striving for the best possible results (Van der Heijde & Van der Heijden, 2006; Van der Heijden et al., 2009). Obviously, in the light of current and future developments within the educational sector, both of these generic employability competences and a high degree of domain-specific knowledge and skills are key for teaching staff members (Evers et al., 2011; Evers, 2012).

Predictors of Employability

Many work-related competences are developed on the job in what Billett (2004) described as workplace participatory practices. These workplace practices include opportunities for learning as affordances for workers, on the one hand, and how individuals purposefully identify and elect these opportunities and participate in these practices in a self-directed way, on the other. The learning potential of a workplace depends on opportunities for learning and the individual's personal agency (cf. the sustainable career paradigm; De Vos et al., 2020; Van der Heijden et al., 2020), as well as the relationships between the individual and their context, in this case, their workplace. Based upon Karasek's theoretical framework (1979), we will first elaborate on a job's potential as an opportunity for the teaching staff members to further develop their employability competences. Karasek's job demands-control model has been criticized for not taking into account the role of individual characteristics (Author, 2012c), such as an individual's personal agency (cf. Billett, 2004). By incorporating the individual's self-directed learning orientation as a predictor of employability competences, we respond to this criticism and add to the scholarly literature in this field.

Job Demands, Job Autonomy and Employability

The learning potential value of a job is a job's potential as 'a nutrient for the employee's further professional development, and refers to the extent to which occupational knowledge and skills can be used and broadened in one's job position' (Van der Heijden & Bakker, 2011, p. 234). According to Karasek (1979), a job that offers growth and learning potential has two main characteristics: (1) it presents *job demands* that are optimally broad and complex, so that it offers a positively experienced amount of work pressure; and (2) it entails an optimal level of *job autonomy*. As regards the latter, a work environment offers more learning potential when the dimensions of job demands and job autonomy are in balance (Karasek, 1979). In such a situation, an employee perceives sufficient opportunities and freedom to adjust successfully to the challenging demands arising from their work environment (Gijbels et al., 2010). Moreover, in a demanding work environment, the employee is allowed to try out different ways of solving problems at work (De Witte et al., 2005; Taris & Kompier, 2005), thereby increasing their occupational expertise, personal flexibility, and ability to anticipate and optimize new challenges regarding their tasks and responsibilities.

Job demands can be both quantitative and qualitative in nature. *Quantitative job demands* refers to workload and has to do with the amount of work that must

be completed within a limited timeframe (De Witte et al., 2005; Kristensen et al., 2004). Quantitative job demands are not necessarily negative (Schaufeli & Bakker, 2004) because high effort at work can result in positive outcomes as well (Hakanen et al., 2017). For example, a heavy workload presumably spurs employees to search for more alternative and effective work strategies and behaviours, in order to reach their challenging work goals (Van Ruysseveldt & Van Dijke, 2011). This triggers a sense of urgency and appeals to the employee's occupational expertise, personal flexibility, and anticipation and optimization competences (see also the scholarly work on job crafting; Rudolph et al., 2017).

Qualitative job demands refers to those psychological aspects of the job that require cognitive effort. It comprises the degree to which the job requires dealing with cognitively demanding complex tasks. In their review study on adaptive expertise, Carbonell et al., (2014) reported a positive correlation between task complexity and adaptive expertise. Kohn and Schooler (1978, Van der Heijden and Bakker (2011), and Van der Heijden et al. (2016) showed that the learning value of the employee's job, an important indicator of qualitative job demands, is positively related to personal flexibility. Moreover, Van der Heijden et al. (2015) also found the learning value of the job to be positively associated with anticipation and optimization. Therefore, we argue that the increased cognitive demands in jobs with a high learning potential contribute to the employee's capability to anticipate future changes and to innovate or optimize their competences (see also Ohly et al., 2006). Consequently, it is hypothesized that:

Hypothesis 1. Quantitative job demands are positively associated with occupational expertise (H1a), personal flexibility (H1b), and anticipation and optimization (H1c) across the three identified age groups.

Hypothesis 2. Qualitative job demands are positively associated with occupational expertise (H2a), personal flexibility (H2b), and anticipation and optimization (H2c) across the three identified age groups.

Job autonomy refers to the scope the employee has for making decisions themselves. It reflects the degree to which the job provides substantial freedom for the employee to use their own judgment in scheduling their work and in determining the order in which tasks are handled, as well as the procedures and methods to be used (Raemdonck et al., 2012a; Hackman & Oldham, 1975; Taris & Kompier, 2005). Several previous empirical studies demonstrated a positive correlation between job autonomy and expertise (Schraub et al., 2011) and between job autonomy and personal flexibility (Bond & Flaxman, 2006; Bond et al., 2008; Kohn & Schooler, 1978). Job autonomy appears to be an important job characteristic in regard to employability enhancement, as it enables employees to experiment with new ideas, experience opportunities for individual development (Plomp et al., 2019) and develop suggestions for future changes (Ohly et al., 2006). Therefore, it is hypothesized that:

Hypothesis 3. Job autonomy is positively associated with occupational expertise (H3a), personal flexibility (H3b), and anticipation and optimization (H3c) across the identified age groups.

Self-Directed Learning Orientation and Employability

Self-directed learning orientation is defined as a relatively stable tendency to take an active and self-initiative approach to work-related learning activities and situations (Lemmetty & Collin, 2020), and to persist in overcoming barriers and setbacks (Raemdonck et al., 2008). More concretely, employees with a self-directed learning orientation identify learning opportunities, show learning initiative, undertake learning activities and persevere in overcoming barriers to learning, if any (Louws et al., 2017). In contrast, people who are less oriented towards self-directed learning exhibit the opposite behaviour: they fail to identify learning opportunities and do not actively take advantage of opportunities to learn (Seibert et al., 2001). Professional learning is an important lever for being able to deal with and anticipate changes in the environment, and self-direction in learning plays a crucial role in this regard (Liu et al., 2014; Morris, 2019). In particular, previous research has indicated that showing proactive learning behaviours, such as information seeking and help and feedback seeking, significantly predicts employees' level of occupational expertise, personal flexibility, and anticipation and optimization (Froehlich et al., 2014b; Liu et al., 2014). We therefore hypothesize that teaching staff members with higher levels of self-directed learning orientation will exhibit greater occupational expertise, personal flexibility, and anticipation and optimization.

Hypothesis 4. Self-directed learning orientation is positively associated with occupational expertise (H4a), personal flexibility (H4b), and anticipation and optimization (H4c) across the identified age groups.

The Moderating Effect of Employee Age

Older workers in particular are often profiled as suffering from a relatively low investment in employability enhancement by their work organisation (Billett et al., 2011; Fleischmann & Koster, 2018). This is partly due to age-related stereotyping (Van der Heijden, 2018; Hanrahan et al., 2017; Mulders, 2019). Stereotypical beliefs about older employees are that older workers are less productive, inadaptatable, unable to cope with changes, less able and willing to learn and to further develop themselves, and less flexible (Harris et al., 2018; Maurer et al., 2008). Not all empirical research, however, has provided consistent evidence for these stereotypes (Raemdonck et al., 2014b). For instance, research by Van der Heijden et al. (2015) demonstrated that employee age correlated negatively with both self-ratings and supervisor ratings of personal flexibility and of anticipation and optimization, and with supervisor ratings of occupational expertise. In contrast, however, Raemdonck et al. (2014b) found positive relationships between chronological age and occupational expertise and personal flexibility, while a negative indirect effect of chronological age was found on anticipation and optimization, via participating in formal learning activities. Based on these inconsistent outcomes, we posit that more research is needed to better understand the possible role of age in predicting employability.

In formulating our age moderation hypothesis, we build on expectancy theory used in a lifespan context (Kanfer & Ackerman, 2004; Vroom, 1964), and socio-emotional selectivity theory (Carstensen, 2006). Based on both theories, it can be assumed that older workers report lower levels of employability in comparison to their younger colleagues.

As regards expectancy theory used in a lifespan context, Kanfer and Ackerman (2004) focused on the cognitive changes related to the process of aging. Concretely, an individual's capacity related to their fluid intelligence (that is, the cognitive processes underlying reasoning skills) decreases with aging because of declining neuronal plasticity, while their capacity related to crystallized intelligence (that is, knowledge that comes from prior learning and past experiences) increases because of accumulated experience. These cognitive changes impact employees' work performance, as aging workers need to put forth much more effort in order to acquire new information, and to reach the same performance level as their younger colleagues (Gegenfurtner & Vauras, 2012). We argue that this reduction in the strength of the association between effort and performance, which is due to cognitive degradation, can result in a decrease in employability competences. Moreover, aging workers have often already attained the highest possible career level, which influences their perception of the utility of investing in reaching even higher performance levels, and of obtaining the external rewards being associated with it (promotion, bonus, etc.). Finally, Kanfer and Ackerman (2004) also assumed that the elderly invested less effort in striving for high performance because of a decrease in vocational interest with aging (Raemdonck et al., 2014b). Instead, they found that, compared to their younger counterparts, older workers reported an increase in the salience of non-work goals related to health and social activities.

As regards socio-emotional selectivity theory (Carstensen, 2006), there also the perspective of an age-related decrease in employability competences can be argued for. This theory focuses on the role of people's time perspective in their pursuit of their goals. Carstensen (2006) and Mather and Carstensen (2005) stated that when people perceive the remaining time that is available in the future as limited, they are inclined to pursue goals directed towards psychological well-being and short-term benefits. Conversely, when people perceive the remaining time as more open-ended, they will prioritize goals related to knowledge acquisition, experiencing novelty, and information gathering (Carstensen, 2006; Kooij et al., 2011). As a result, when workers are approaching retirement age, they perceive their remaining time at work as 'limited time left' and will therefore focus on work goals related to the maintenance and optimization of emotional states, instead of on goals related to growth and learning and career development (Gegenfurtner & Vauras, 2012). It is important to be clear that this reorganisation of goals among aging workers is not caused by their increased chronological age as such, but rather by a shift in their future time perspective (Meurant & Raemdonck, 2014). Several empirical studies have indeed demonstrated that a higher chronological age is positively related to a narrower future time perspective, which explains why older workers invest less in knowledge acquisition and in adapting to and anticipating different kind of changes (e.g., De Lange et al., 2011; Henry et al., 2017; Zacher & Frese, 2009).

While both expectancy theory used in a lifespan context (Kanfer & Ackerman, 2004; Vroom, 1964) and socio-emotional selectivity theory (Carstensen, 2006) provide us with arguments for a negative relationship between calendar age and occupational expertise, personal flexibility, and anticipation and optimization, we believe that these associations are more complex, and that other individual and contextual variables might interact with age. In this current study, where both individual and contextual variables have been incorporated, it is assumed that the strength of the predictive contribution of job demands, job autonomy and a self-directed learning orientation to employability competences might differ across age groups.

In the existing literature, different ideas for the moderating role of age for the relations between the predictors under study and employability can be found. As far as *self-directed learning orientation*, it can be expected that its effect on employability competences is stronger among older workers. Research from Armstrong-Stassen (2008a) demonstrated that staff development HR practices are less prevalent among older workers, and that the resulting less favourable working conditions need to be compensated for by the individuals themselves. Therefore, older employees might have to demonstrate a higher level of self-directed learning orientation to arrive at the same level of employability competences in comparison with employees from other age groups. Likewise, Van Vuuren et al. (2011), in their empirical study among 178 teaching staff members working in primary education, observed relatively high scores for employability among younger workers who were less willing to participate in lifelong learning, in comparison with senior workers who demonstrated similarly low scores for willingness to participate in lifelong learning. The explanation the authors gave for this finding was that the willingness to participate in learning especially pays off and contributes to the teacher's higher employability at a higher age.

However, other scholarly work has suggested a weaker relationship between self-directed learning orientation and employability competences among older employees. For example, research from Bertolino et al. (2011) showed age to be an important moderator in the relationship between proactive personality and perceived career development from training and training behavioural intentions. Specifically, they found a stronger, positive predictive relationship between proactive personality and the outcomes of perceived career development from training and training behavioural intentions in the younger age group in comparison with their older counterparts. The latter group appeared to be more focused on maintenance of available resources than on their optimization (see also Kanfer & Ackerman, 2004; Kooij et al., 2011). Otherwise stated, the older employees also seemed to show a proactive personality; however, this was not manifested in career growth and training intentions. Moreover, similar to the study by Van Vuuren et al. (2011), the largest differences in career development from training and training behavioural intentions were found between older and younger workers with low levels of proactive personality. As having a proactive personality is related to having a self-directed learning orientation (Parker et al., 2019; Raemdonck et al., 2017). As having a proactive personality is related to having a self-directed learning orientation (Parker et al., 2019; Raemdonck et al., 2017), we expect similar findings in the current study.

As far as *job demands* and *job autonomy* and their relationship with employability, we also assume that age plays a moderating role. Older workers are more likely to experience career plateauing in comparison with their younger counterparts (Armstrong-Stassen, 2008b; Heckhausen et al., 2017). Career plateauing might involve structural hierarchical plateauing, that is, a stagnating vertical movement within the organisation (Raemdonck et al., 2012b), but it could also involve job content plateauing, when the individual is no longer challenged by his or her job or job responsibilities (Armstrong-Stassen, 2008b). Given the danger of career plateauing in light of the protection and preferably further enhancement of employability competences (Lin et al., 2018), we posit that cognitively demanding work is important, especially in late career life, as it positively affects intellectual functioning (Schooler & Mulatu, 2004). Despite the lack of research findings, the same result is expected for an optimal level (i.e., moderately high) of quantitative job demands (Van Veldhoven, 2014). These outcomes suggest that the career sustainability of older workers may be more strongly affected by disadvantageous working conditions in comparison with their younger counterparts.

A similar line of reasoning holds for job autonomy. Due to their higher level of work experience and their relatively more independent self-concept, older workers might have a stronger need for autonomy (MacKeracher, 2004). Therefore, a stronger positive relationship between job autonomy and employability among older workers might be expected. However, up to now, there has been a lack of empirical work on the association between job autonomy and employability, and the scarce research that is available has reported contradictory results. Specifically, the research by Van Emmerik and colleagues (Van Emmerik et al., 2012) indicated that job autonomy is positively related to employability. In contrast, Nelissen et al. (2017) did not find support for a significant relationship between autonomy and employability. Overall, analogously to scholarly work on the predictive value of self-directed learning orientation for employability, empirical research on the work-related contextual antecedents of employability is lacking. In addition, age differences have received little attention in the employability research thus far (De Lange et al., 2020). Therefore, we formulate a general proposition and refrain from specifically hypothesizing differences for the three identified age groups.

Hypothesis 5. The strength of the relationships between job demands, job autonomy and self-directed learning orientation, on the one hand, and occupational expertise, personal flexibility, and anticipation and optimization, on the other hand, differs across the identified age groups (Fig. 1).

Method

Sample and Procedure

An electronic cross-sectional survey was sent to members of a Dutch panel. This panel consisted of a pool of respondents working in the educational sector, including

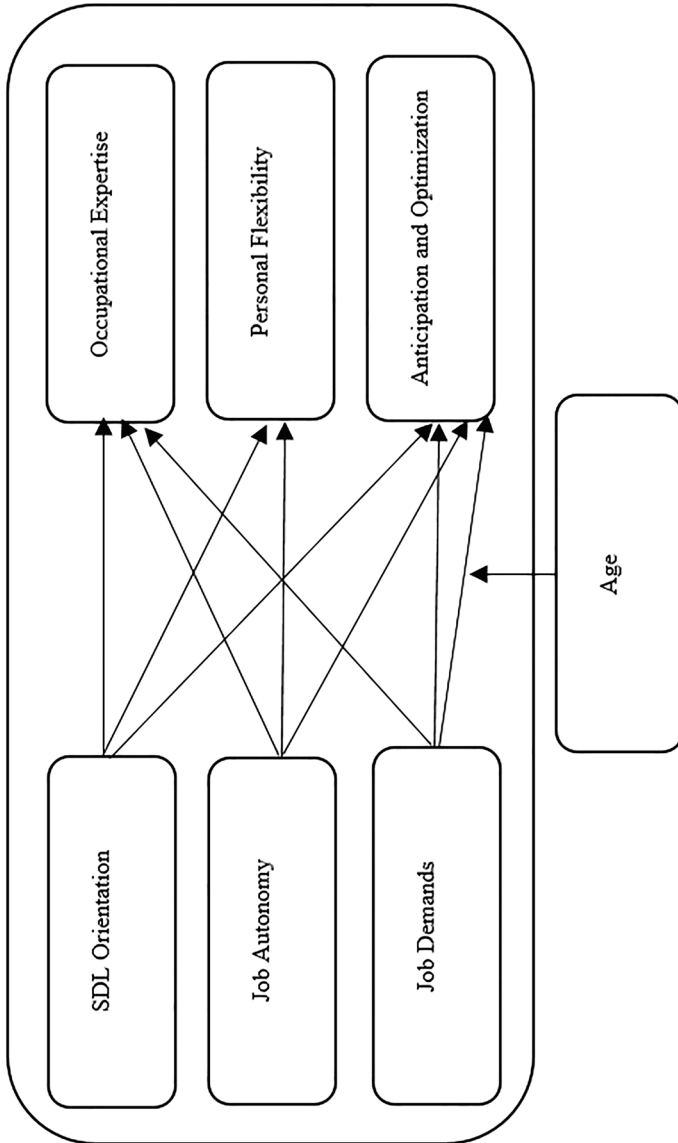


Fig. 1 Research model

mostly teachers, but also support staff and managers working in numerous types of jobs at middle and higher level positions.

The teaching staff members had registered voluntarily to participate at regular times in governmental research and signed an informed consent. The percentage of primary, secondary, secondary vocational, higher professional education and university teaching staff in the sample was representative of the total population of employees working in these various levels of the educational sector (Onderwijs in cijfers, 2021). A total of 3,139 participants responded to the survey (response rate of 46%). Among those respondents, 23% worked in primary education, 30% in secondary education, 22% in secondary vocational education, 17% in higher professional education, and 8% at a university. There were 16% working at the management level, 62% were teachers, 14% were teaching assistants, and 8% were administrative and logistic staff. Nearly all (92%) had a fixed contract, and half were male. The age of the participants ranged between 21–67 years old, with a mean age of 48. Only 13% were younger than 35 (starter), 35% were from 35 to 50 years old (middle-aged) and 52% were over 50 (seniors).

Measures

Employability was measured by means of three dimensions conceptualised by Van der Heijde and Van der Heijden (2006). Initially, it was our intention to use the validated questionnaire of Van der Heijde and Van der Heijden (2006) for the three dimensions of employability competences. However, the governmental organization that was responsible for the item pool, insisted on using different scales for the subcomponents of employability because these were shorter. Occupational expertise was measured with six items taken from Thijssen (2005), using a 5-point Likert scale. The scale ranged from *strongly disagree* (1) to *strongly agree* (5). An example item was: ‘Colleagues come to me to ask for advice when the work gets complicated’ (Cronbach’s $\alpha=0.69$). Personal flexibility was measured with four items taken from Van der Heijde and Van der Heijden (2006), using a 5-point Likert scale. The scale ranged from *strongly disagree* (1) to *strongly agree* (5). An example item was: ‘I have a positive attitude toward changes in my job’ (Cronbach’s $\alpha=0.74$). Anticipation and optimization was measured on the basis of six items selected from an instrument developed by Kuijpers and Scheerens (2006) that deals with competences of career self-management. The selected items reflected the employees’ competences to prepare for future changes themselves in their job and their professional life, in a personal, creative and innovative way. The scale used a five-point Likert scale, and ranged from *strongly disagree* (1) to *strongly agree* (5). An example item was: ‘I find it important that I deliberately change my work activities in order to positively influence my career’ (Cronbach’s $\alpha=0.84$).

Job demands and Job autonomy. Job demands were measured by means of six items from Van den Bossche et al. (2007), using a 4-point Likert scale. The scale ranged from *never* (1) to *always* (4). The instrument included three quantitative and three qualitative items. An example of an item measuring quantitative job demands was: ‘Do you need to carry out a large amount of work?’ (Cronbach’s α in this

specific study = 0.79). An example of an item measuring qualitative job demands was: 'I have to develop my own strategies to solve complex problems' (Cronbach's $\alpha = 0.50$). Job autonomy was measured with a scale developed by Van den Bossche et al. (2007) consisting of five items using a 3-point Likert scale (reverse-score). The scale ranged from *yes, regularly* (1), *sometimes* (2) to *no* (3). An example item was: 'Can you decide for yourself about how to carry out your job?' (Cronbach's $\alpha = 0.51$).

Self-directed learning orientation was measured by means of a one-dimensional scale going into the extent to which the individual employee was inclined to adopt an active approach to learning, to take the initiative, and to overcome obstacles to learning (Raemdonck et al., 2008). This scale contained six items using a five-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (5), and was based on the proactive personality scale developed by Bateman and Crant (1993). The scale items were slightly reworded in order to make them domain-specific and referred to proactiveness in relation to work-related learning. Previous studies by Gijbels et al. (2010, 2012), and Raemdonck et al. (2014a) demonstrated high reliability (with Cronbach's alphas ranging between 0.83 and 0.86). An example item was: 'If I want to learn more for my job, no obstacle is going to stand in my way' (Cronbach's α in this particular study = 0.68).

Analyses

Preliminary analyses, descriptives and correlations for all variables under study were carried out using IBM SPSS Statistics 22 (IBM SPSS Statistics, IBM Corporation). To test our research hypotheses, structural equation modelling (SEM) using AMOS software, version 16.0 (Arbuckle, 2007) was performed. In line with Anderson and Gerbing's (1988) 2-step approach, the fit of the measurement model was examined before the fit of the structural model was tested. The aim of examining the measurement model was to assess the convergent validity (cfr. common methods bias) and reliability of the constructs before using them in the full structural model (Anderson & Gerbing, 1988). Confirmatory factor analysis using maximum likelihood estimation was performed to estimate the parameters of the model. Further details on the development of a measurement model are available in McKenzie et al. (2004).

Following Byrne (2001), the model fit was tested for the full sample as well as separately for the three identified age groups (< 35, 35–50, > 50). More specifically, using SEM invariance analysis, model equivalence for the age groups was tested to determine whether the three groups could be fitted to a common model, and further used to identify the specific paths under study. This was done by comparing the chi-square statistic of the model where path coefficients were constrained to be equal in all three age groups with the chi-square statistic of the unconstrained model. If there was no significant difference between the two models, the model was accepted as being the same across age groups, as this was more parsimonious (McKenzie & Gow, 2004). If there was a significant difference between the two models, the parameters that showed

significant differences across age groups were identified. The fit of the model was expressed by the following fit indices: the chi-square value, root mean square error of approximation (RMSEA), normed fit index (NFI), and comparative fit index (CFI). In contrast to the first two indices, the latter two do not depend on sample size, as discussed by Marsh et al. (1996). NFI and CFI values greater than 0.90 are considered as showing a good fit (Hoyle, 1995). Values of RMSEA smaller than 0.08 indicate an acceptable fit (Browne & Cudeck, 1993). If the chi-square value is smaller than 0.05, the model is rejected (Carmines & McIver, 1981).

Results

Outcomes of the Preliminary Analyses

The means, standard deviations, and outcomes of the correlation analysis for the whole sample ($N=3139$) are presented in Table 1. Next, descriptive statistics for the three age groups separately (<35 , $35\text{--}50$ years, >50) are given in Table 2. An analysis of variance (ANOVA) indicated that differences between age groups regarding all three employability competences and for job autonomy were significant. Taking into account the unequal distribution of respondents across age groups, Bonferroni's test was used for post-hoc analysis, as the most conservative. The outcomes from the post-hoc analysis showed that younger teaching staff members had significantly lower occupational expertise than their older colleagues, including both middle-aged and senior teaching staff. In addition, middle-aged teaching staff members scored significantly higher for personal flexibility than their older colleagues, while senior teaching staff members were significantly less capable of anticipation and optimization in comparison to their younger colleagues, including both middle-aged and young teaching staff members. Finally, using our data, young teaching staff members scored significantly lower for autonomy than middle-aged and senior teaching staff members.

Measurement Model

To verify the fit of the measurement model, confirmatory factor analyses were performed. The item loadings from the latent variables ranged from 0.05 to 0.83. Items with loadings below 0.40 were deleted in order to have good convergent validity, which was applicable for four items referring to expertise, three items referring to job autonomy and one item referring to self-directed learning orientation (Hinkin, 1995, 1998). Except for qualitative job demands (0.50) and job autonomy (0.51), all scales showed composite reliability indicated by the Cronbach's alpha ranging from 0.68 to 0.84. The latent variable covariance matrix showed that covariances ranged from -0.07 to 0.44, all being less than 0.85 (Podsakoff et al., 2003). Additionally,

Table 1 Means, standard deviations and bivariate correlations (whole sample)

Variable	M	SD	1	2	3	4	5	6	7	8
1 Occupational Expertise	3.65	.70	1							
2 Personal Flexibility	4.01	.57	.25**	1						
3 Anticipation and Optimization	3.61	.64	.20**	.36**	1					
4 Job Autonomy	1.91	.33	.07**	.05*	.00	1				
5 SDL Orientation	3.63	.51	.25**	.42**	.46**	.03	1			
6 Quantitative Job Demands	2.81	.61	.21**	.01	.10**	.12**	.03	1		
7 Qualitative Job Demands	2.72	.54	.22**	.22**	.18**	.32**	.04*	.26**	1	
8 Age	3.65	.70	.05*	-.04*	-.19**	-.02	.08**	-.01	.04*	1

$N = 3139$, * $p < .05$, ** $p < .01$. SDL orientation = Self-directed Learning Orientation

Employability and SDL Orientation scales ranged from *strongly disagree* (1) to *strongly agree* (5). Quantitative and qualitative job demands scale (reverse coded) ranged from *never* (1) to *always* (4). Job autonomy ranged from yes, regularly (1) to no (3)

Table 2 Means and standard deviations for the different subsamples and analysis of variance to compare age groups

Variable/sample	< 35 years old (n = 409)		35–50 years old (n = 1124)		> 50 years old (n = 1606)		F
	M	SD	M	SD	M	SD	
Occupational Expertise	3.54	.70	3.68	.68	3.66	.72	6.63**
Personal Flexibility	4.04	.50	4.04	.57	3.98	.59	5.46**
Anticipation and Optimization	3.78	.52	3.70	.63	3.50	.66	49.40***
Quantitative Job Demands	2.77	.61	2.84	.61	2.81	.60	2.29
Qualitative Job Demands	2.69	.48	2.70	.54	2.74	.54	2.39
Job Autonomy	1.85	.34	1.91	.33	1.93	.34	7.52**
SDL Orientation	3.63	.49	3.64	.51	3.62	.52	.97

** $p < .01$, *** $p < .001$. SDL orientation = Self-directed Learning Orientation

Employability and SDL Orientation scales ranged from *strongly disagree* (1) to *strongly agree* (5). Quantitative and qualitative job demands scale (reverse coded) ranged from *never* (1) to *always* (4). Job autonomy ranged from yes, regularly (1) to no (3)

none of the confidence intervals included 1, indicating good discriminant validity for all model variables. This led us to conclude that the constructs were distinctive and the model had a good fit (Podsakoff et al., 2003).

Structural Model

In order to test our hypotheses, the fit of the structural model was examined. The fit indices indicated that the structural model only moderately fit the data ($\chi^2 = 245.78$, $df = 3$; RMSEA = 0.16, NFI = 0.91; CFI = 0.91; see Table 3). Therefore, the standardized factor loadings of the observed variables were carefully studied (see Table 4). No significant outcome was found for the association between job autonomy and personal flexibility, for job autonomy and anticipation and optimization, for quantitative job demands and anticipation and optimization, and for qualitative job demands and anticipation and optimization, for any of the identified age groups. Therefore, these relationships were omitted from the path model, which led to an alternative model, which was our hypothesized model minus the four non-significant relations.

The alternative model showed a slightly better fit to the data ($\chi^2 = 264.57$, $df = 21$, RMSEA = 0.06, NFI = 0.90, CFI = 0.91). To compare the fit of the hypothesized model and the alternative model, the difference in the models' chi-square estimates was examined (see Table 3). The results showed that the alternative model did not fit the data significantly better, but given the improved RMSEA, it was decided to continue with the alternative model for further analyses (Browne & Cudeck, 1993).

Based on a more detailed look at the estimated path coefficients of the hypothesized model (Table 4), it can be concluded that quantitative job demands were significantly positively related to occupational expertise for all age groups. In addition, for the middle-aged group, quantitative job demands appeared to be significantly

Table 3 Goodness-of-fit information for within- and between-group comparisons

	χ^2	df	p	NFI	CFI	RMSEA	Invariance
< 35 years old	49.12	3	.000	.82	.82	.19	
35–50 years old	80.41	3	.000	.91	.91	.15	
> 50 years old	113.43	3	.000	.92	.92	.15	
Hypothesized Model (Unconstrained)	245.78	3	.000	.91	.91	.16	Rejected
Alternative Model (Unconstrained)	264.57	21	.000	.90	.91	.06	Rejected
Constrained Model	305.31	37	.000	.89	.90	.05	Rejected
χ^2 Difference (Hypothesized – Alternative Model)	18.79	18	.405				
χ^2 Difference (Constrained – Unconstrained Model)	40.735	16	.001				Rejected (groups are different at the model level)

Table 4 Parameter estimates for the alternative model (unconstrained)

Parameter	< 35 years old	35–50 years old	> 50 years old
Quantitative Job Demands → Occupational Expertise	.21***	.13***	.20***
Quantitative Job Demands → Personal Flexibility	-.06	-.12***	-.02
Qualitative Job Demands → Occupational Expertise	.08	.14***	.20***
Qualitative Job Demands → Personal Flexibility	.12*	.14***	.09***
Autonomy → Occupational Expertise	.29**	.03	.11*
SDL Orientation → Occupational Expertise	.20**	.24***	.28***
SDL Orientation → Personal Flexibility	.32***	.41***	.48***
SDL Orientation → Anticipation and Optimization	.47***	.58***	.61***

* $p < .05$, ** $p < .01$, *** $p < .001$. SDL Orientation = Self-directed Learning Orientation

negatively related to personal flexibility. Furthermore, qualitative job demands were significantly positively related to personal flexibility for all age groups. However, qualitative job demands were only significantly positively related to occupational expertise for the middle-aged group and the senior employees. Job autonomy appeared to be significantly positively related to occupational expertise for the young and senior age groups, in contrast to the middle-aged group,. Furthermore, self-directed learning orientation was significantly positively associated with all three employability competences, that is, occupational expertise, personal flexibility and anticipation and optimization. These outcomes confirmed Hypotheses H1a and H2b, fully confirmed Hypothesis 4 (H4a, H4b, H4c), and implied that Hypotheses H1b, H1c, H2a, H2c, and Hypothesis 3 (H3a, H3b, H3c) were all to be rejected, based on our data.

Multi-group Analysis to Investigate the Possible Moderating Effect of Age

As indicated previously, to examine whether the baseline model fit across the three identified age groups, a model constraining the factor loading paths to be equivalent (constrained model, see Table 3) was compared with an unconstrained model. The change in the chi-square statistic showed that the constrained model, in which path coefficients were hypothesized to be equal in all three groups, was worse in comparison with the unconstrained model, leading to the conclusion that the model fit was indeed different across age groups.

To investigate the differences between the identified age groups in more detail, critical ratios for differences were calculated (see Table 5). As indicated in Table 5, the relationship between self-directed learning orientation and personal flexibility was significantly stronger for the senior group of teaching staff members in comparison with their young colleagues. Furthermore, the relationship between self-directed learning orientation and anticipation and optimization was significantly stronger for the middle-aged teaching staff members in comparison to their young colleagues, as well as for the senior teaching staff in comparison to the young ones. It can be concluded that from middle age onwards, the relationship between

Table 5 Critical ratios for age group differences

Parameter	< 35 years old	35–50 years old	> 50 years old	Group 1 Versus Group 2: z-value	Group 1 Versus Group 3: z-value	Group 2 Versus Group 3: z-value
Quantitative Job Demands → Occupational Expertise		.13***	.20***			1.66*
Quantitative Job Demands → Personal Flexibility		.12***	-.02			2.95***
Autonomy → Occupational Expertise	.29*	.03	.11*	-2.30**	-1.69*	
SDL Orientation → Personal Flexibility	.32***		.48***		2.83***	
SDL Orientation → Anticipation and Optimization	.47*	.57*	.60***	1.79*	2.42**	

* $p < .05$, ** $p < .01$, *** $p < .001$. SDL Orientation = Self-directed Learning Orientation

self-directed learning orientation and anticipation and optimization becomes stronger. Moreover, we found that the relationship between job autonomy and occupational expertise was significantly stronger for the young staff members in comparison with both their middle-aged and senior counterparts. In other words, especially at the beginning of one's career, experiencing job autonomy is of crucial importance in order to further develop one's occupational expertise. Finally, the relationship between quantitative job demands and occupational expertise appeared to be significantly stronger for the senior teaching staff members in comparison to their middle-aged colleagues, while the relationship between quantitative job demands and personal flexibility was significantly stronger for the middle-aged teaching staff members in comparison to their senior colleagues. With these outcomes, Hypothesis 5 was partially confirmed.

Discussion and Conclusions

The educational sector is confronted with aging staff as well as increased pressure to innovate, putting sustainable careers on top of the agenda of both policy makers and practitioners. Therefore, educational institutions have started paying greater attention to the employability competences of their teaching staff members across different age categories. In this study, different predictors (quantitative and qualitative job demands, job autonomy and self-directed learning orientation) of employability competences (occupational expertise, personal flexibility, anticipation and optimization) were investigated, using a Dutch sample. Given the importance of sustainable careers for teaching staff of all ages, the relationships between the predictors and employability competences were studied in three age groups: young, middle-aged and seniors. This study investigated the role of age in order to respond to calls for more evidence-based research dealing with learning over the lifespan perspective. In addition, this was studied in the educational sector, which has its own specificities and challenges, such as the need for being resilient while having limited career opportunities.

Although Kanfer and Ackerman's expectancy theory used in a lifespan context (2004) and Carstensen's socio-emotional selectivity theory (2006) offer plausible arguments for the proposition that with aging, workers' employability might be at stake, our study offers interesting insights on how to overcome the potential negative role of age. First, our findings indicated that employees showing a higher self-directed learning orientation reported higher levels of occupational expertise, personal flexibility, and anticipation and optimization. This counted for all age groups, although the relationship between self-directed learning orientation and personal flexibility was relatively stronger for older employees in comparison with the young employees, and the relationship between self-directed learning orientation and anticipation and optimization was stronger for senior and middle-aged teaching staff members in comparison with their young colleagues. This outcome is in line with insights from lifespan theories (Freund et al., 2012; Kanfer & Ackerman, 2004). In particular, it appears that older employees need to demonstrate relatively higher levels of self-directed learning orientation to arrive at the same level of personal

flexibility and anticipation and optimization in comparison with their younger counterparts. The argument behind this is that older people are more focused on maintaining and avoiding loss of current resources than on gaining new ones (Baltes et al., 1999). In a similar vein, Armstrong-Stassen (2008a) posited that in order to cope with their less favourable working conditions, as reflected in lower prevalence of developmental HR practices, older workers need to invest ample personal resources in order to compensate for the lack of these practices. In other words, having a self-directed learning orientation clearly pays off for older workers.

Second, our findings indicated that positive relationships were found between teaching staff members' perceptions of their quantitative job demands and their occupational expertise, for the three identified age groups. This implies that higher workload is positively related to teaching staff members' level of professional knowledge and skills, including meta-cognitive skills and social recognition by important key figures. This finding confirms Van Ruysseveldt and Van Dijke (2011) arguments that a higher workload presumably provokes employees to search for more alternative and effective work strategies and behaviours, in order to reach their challenging work goals. This triggers a sense of urgency and appeals to the employee's occupational expertise. With respect to the role of age, our data showed that for the seniors, in contrast to their middle-aged colleagues, quantitative job demands appeared to be positively related to occupational expertise, while the reverse was found for the positive relationship between quantitative job demands and personal flexibility; in the latter case, the middle-aged benefitted more strongly from having a job with higher workload. This might be explained in two ways. First, it might be that for the oldest category of workers, a high level of quantitative demands, although enhancing their professional competence base, might hinder their broader development as reflected in personal flexibility (see also Van den Broeck et al., 2010 in their article differentiating between job hindrances and job challenges). Second, although Van-Belle et al. (2017) indicated that job crafting is a successful aging strategy and is enhanced in jobs with high autonomy and workload, as our data seemed to indicate, older workers might be less engaged in job crafting (Nagy et al., 2019). This is troublesome, as job crafting is perceived to be an important activity for protecting and further enhancing their employability (Akkermans & Tims, 2017), and through this their career sustainability (De Vos et al., 2020; Van der Heijden et al., 2020). Context might play a role. In the educational setting where other formal tasks and roles than routine teaching (for teaching staff), administration (for administrators) or management (for the management of the school) are rather scarce, staff might not be aware of possibilities for job crafting in terms of increasing social and structural job resources, increasing challenging job demands and decreasing hindering job demands (Van Wingerden et al., 2017). In addition, for senior teaching staff, compared to other age groups, job crafting possibilities might even be more limited. This lack of possibilities combined with a high workload might explain why for senior staff, no positive relation could be found between quantitative job demands and personal flexibility.

Third, our data indicated positive relationships between perceptions of qualitative job demands and personal flexibility for all age groups. This is in line with findings from Van der Heijden et al. (2016), who found a positive relationship between the

learning value of the job and personal flexibility. This finding also confirms prior research indicating that challenging work tasks and jobs that offer a lot of learning opportunities enhance individuals' motivation to adapt to new situations at the job level, at the organisational level, or even to change jobs (Peiró et al., 2002). In the same vein, Rosenblatt (2001) indicated that teachers' flexibility related to change and to advancing their own careers will increase if they take up different roles than teaching (pedagogical or administrative roles).

Fourth, our data demonstrated a positive relationship between qualitative job demands and occupational expertise for middle-aged and senior staff members. This is in line with the study by Ingusci et al. (2016). They indicated that, given the changes that teaching staff experience, such as technological advancement influencing their daily work, the new knowledge, skills and competences needed by teaching staff members change over time. During the course of a professional career in education, professional development needs change from learning general skills to learning specific skills. Older teaching staff members seek training opportunities related to current professional needs (such as technological advancement). When these training needs are met by offering them the challenge to explore new tools and techniques, and when they supported in this through the help of peers or specific training programs, teaching staff members at a later career stage have the capability to acquire the needed knowledge and skills.

Fifth, job autonomy seems to play a significantly positive role for young employees in connection with enhancing their level of occupational expertise. This finding confirms earlier work by Pearson and Moomaw (2005) demonstrating that when teacher autonomy increased, so did professionalism. With respect to the role of age, our finding is also in line with the results of the Fernet et al. (2014). These researchers showed that positive passion for the job, what is called harmonious passion, in the early years of a career motivates teachers to willingly and effectively invest effort in their work. Job autonomy is an important antecedent of this harmonious passion for work and, in turn, of professional efficacy. This implies that if job autonomy leads to harmonious passion, a positive relationship with occupational expertise can be expected for young teaching staff members. Moreover, in addition to the mediating role of harmonious passion, the authors argued that the support teachers experience in dealing with job autonomy might play an important moderating role.

Finally, our findings could not confirm the predictive role of quantitative and qualitative job demands and job autonomy in connection with anticipation and optimization. Possibly, the difference in the character of the employability competences plays a role here. Personal flexibility is reactive and adaptive in nature, while anticipation and optimization is a proactive and creative form of flexibility, which might be more strongly associated with individual instead of work context-related factors. Last but not least, based on our study, we can conclude that, even outweighing the value of personal flexibility, a self-directed learning orientation helps employees best in dealing with future changes in the labour market and protecting their career potential (i.e., their employability; Van der Heijden et al., 2018).

Limitations of the Study and Recommendations for Future Research

First, all data were collected using survey research, which may have resulted in some response set consistencies. In order to reach a large sample of respondents, we chose to use an existing Dutch panel to administer the survey. The downside of this approach is that we were not able to contact supervisors for their employability ratings, given the respondents' data were anonymous. For future research, we suggest using supervisor ratings in addition to self-ratings (Van der Heijde & Van der Heijden, 2006).

Second, all data were collected at one point in time, that is, the study was cross-sectional. This implies that further research is needed to address issues of causality. Research using multi-wave designs can provide more specific information about the stability and change of the variables, and about cross-lagged relationships (i.e., over time) compared with our cross-sectional approach (Taris & Kompier, 2005). For example, showing high-quality employability competences might lead to attracting a more high-demanding job with much autonomy, leading to the development of more expertise.

Third, research into the generalizability of our outcomes to other occupational settings and/or countries is recommended, especially, as one might assume that the prevalence and the impact of age-related stereotyping differ across (organisational) cultures (Nicolas et al., 2020; Perry & Parlamis, 2005). This calls for future cross-validation of our findings in other countries and sectors.

Fourth, the qualitative job demands scale and the job autonomy scale that were used showed relatively low Cronbach's alpha's (0.50 and 0.51), which implies that we should interpret our findings with care. For research purposes this is less of a problem, but for practical use we strongly recommend future research that includes the original long version of these scales, which had high reliability scores (Kruyen et al., 2013; Lance et al., 2006).

Fifth, our sample consisted of staff working in education, including teachers, support staff and management, who were employed at different levels of education, with more of teaching staff in primary and secondary education than in other levels. This might have influenced the results, given the fact that career perspectives as well as job autonomy and demands might be experienced differently depending on the job and on different levels of education. For future research, we would like to recommend not only comparing age groups, but also shedding more light on possible differences between employees working in different jobs and working at different levels of education.

Sixth, future research is also needed to increase our understanding of organisational- and individual-level factors that might moderate the relationship between job demands and job autonomy, on the one hand, and occupational expertise, personal flexibility, and anticipation and optimization, on the other hand. For example, Fernet et al. (2014) referred to the mediating role of harmonious passion in the relation between job autonomy and professional efficacy. In addition, they argued for the moderating role of support to deal with the challenges of having autonomy in the job. Moreover, it can be argued that a self-directed learning orientation, as well as the investigated job-related variables, triggers teaching staff members to invest

in learning activities, which in turn positively affects their employability competences (Van der Klink et al., 2014). This calls for including teaching staff members' actual learning activities as a mediator in the relation between the individual and job-related variables and employability.

Seventh, when measuring employability, we opted for scales that have been validated in different contexts but were not specifically developed for the educational sector. For example, for measuring anticipation and optimization, we opted for a scale which was validated in 2006 for different target groups such as policymakers, educators, human resource managers in organizations and career counsellors. The advantage of using scales validated for different target groups is that it offers the possibility to cross validate research findings in different target groups. The downside of a generic instrument is that it might miss the context-specificity of a target group which in turn might influence the responses. For future research, we suggest to investigate the predictors of employability which has been addressed in this study, in a qualitative way, in order to grasp in depth how staff in the educational sector, given its specific characteristics, perceive employability and its predictors.

Practical Implications

Our findings indicate that supporting teaching staff members' self-directed learning orientation is an effective lever for enhancing their sustainable employability across age groups, and underline the importance of an organisational climate that facilitates proactive behaviours (Baer & Frese, 2003). More specifically, a positive learning climate is pivotal in order to stimulate teaching staff members to pro-actively invest in learning activities. This implies that giving teaching staff members the responsibility and choice of planning what, when and where they learn, combined with support from their supervisor and colleagues, will motivate them to pro-actively engage in an upward learning trajectory (Crans et al., 2021). With respect to the role of the management in educational settings, one's direct supervisor in particular can play a significant role in encouraging and rewarding teaching staff members who invest in identifying and taking advantage of learning opportunities by showing learning initiative, undertaking learning activities and persevering in overcoming barriers to learning. Moreover, HR policies play an important role in encouraging an orientation towards self-directed learning. For instance, we advocate that it is important to put training and development topics and the pro-active role of teaching staff themselves with regard to learning high on the agenda of yearly performance appraisal interviews as well as of regular feedback talks.

Second, for young teaching staff members, offering more job autonomy has been proven to help them in further developing their occupational expertise. Management in educational settings should not only foster their teaching staff's job autonomy from the very start of staff members' careers, but should also support teaching staff in dealing with this autonomy. They should encourage employees to take up a wider range of tasks and broader responsibilities than only routine teaching.

Third, for senior teaching staff members, it is important that supervisors help them to protect their personal flexibility by providing jobs that offer ample

challenges to learn new tasks and to take up new responsibilities. Obviously, all of this should be done in an environment in which proactive behaviours are encouraged and supported, and in which it is safe to make mistakes and to ask for help from colleagues when striving for further professional development. Supervisors can also help their senior subordinates by encouraging them to participate in learning programs that focus on how they can adapt their job, and in this way protect its alignment with their capacities, preferences and changing career goals. In this way, supervisors help employees to manage their employability until the official retirement age, or even beyond (Le Blanc et al., 2019).

Fourth, the role of chronological age deserves much more attention in work organisation, with educational settings being no exception. The sustainability of an individual's career comprises a dynamic process in which all kinds of critical events or career shocks (Akkermans et al., 2018) in one's private and work life can occur, which means that the focal person's personality and agentic orientation as well as the influence of contextual factors in the job and workplace need to be carefully monitored throughout the lifespan.

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Declarations

Conflicts of Interest There are no conflicts of interests.

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