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**Thriving in late career: the role of the psychological experiences of vitality
and learning in the relationships between work design characteristics and
individual work outcomes**

(Developmental paper)

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Abstract

We propose a model of work design in late career that will be tested in two quantitative studies with overall 800 older workers (aged 55 years and over) from two industrial sectors in the United Kingdom (healthcare and information and communication technologies). Our conceptual model integrates current theories around life-span development, positive organisational behaviour, job design, work performance, well-being, and late career. Our aim is to explore the potential benefits of flexible work design in late career for both employers and employees in terms of various aspects of employees' individual performance. We suggest that certain job design and broader work characteristics will have positive or negative effects on the individual work outcomes in late career. Most of these effects will be mediated (fully or partially) by employees' experiences of thriving at work, demonstrated through two main types of orientations (vitality and learning) and will be best interpreted within a life-span developmental framework.

Theoretical background and research hypotheses

Statistics from the last almost 30 years show a consistent tendency towards demographic ageing across the world (United Nations, 2013). In this context, the population and consequently the workforce of the European Union are becoming progressively older (Eurofound 2012; 2013). Moreover, this demographic change is predicted to become entrenched in Europe and beyond during the next half century (United Nations, 2013; EEO Review, 2012; Robson & Hansson, 2007; Kooij et al., 2011). For instance, the numbers of older workers (aged 55 years and over) in Europe is expected to increase by about 60% by 2050 (Truxillo et al., 2012). These changes impose pressures on the national financial, social security and healthcare systems and, therefore, demand a flexible response from the society and employers in particular. One way forward is to ensure sustainability by supporting longer, but also productive and healthy working lives.

In response to this grand societal challenge, terms like “age-friendly employment” have been introduced and various prevention measures ranging from changes in legislation and social security systems to the introduction of tailored life-long learning programmes and flexible work models have been undertaken (EEO Review, 2012; Barnes et al., 2009; Felstead, 2010). From an academic research perspective, the ageing workforce has been a topic of multi-disciplinary interest, attracting scientists with economic, sociological, psychological,

vocational, biological, and political backgrounds (CEDEFOP, 2012). A substantial number of studies from the last two decades has addressed issues such as age-related intra-individual changes and their impact on work behaviours (Warr, 1993; 2001; Kanfer & Ackerman, 2004; Kooij et al., 2011; Roberts et al., 2006), age stereotypes and discrimination against older workers (Posthuma & Campion, 2009; Ng & Feldman, 2012; Finkelstein et al., 2015), and the role of employers in supporting older workers (Armstrong-Stassen, 2008; Barnes et al., 2009; Inder & Bryson, 2007).

Considering the significant amount of academic literature about older workers, it is surprising how undeveloped the issue of job design in late career remains. Despite recently increased interest in the impact of some job characteristics (e.g. job control) on older workers' well-being and performance (e.g. Müller et al., 2012), only a small number of studies (e.g. Truxillo et al., 2012; Wang et al., 2012) have examined the potential effects of job design characteristics on work outcomes in late career. In addition, the need for empirical evidence about these potential effects has been emphasised (Truxillo et al., 2012; Taneva, Arnold, & Nicolson, in press). We address this need by investigating the relationships between six work characteristics (five job design dimensions and one broader aspect of work environment), the psychological construct of thriving at work, work ability and three aspects of individual work performance. More specifically, we look at the mediating role of the two facets of thriving at work (vitality and learning) on the relationships between work characteristics, work ability and individual performance indicators. We work with two studies with older workers (aged 55 years and over) from two industrial sectors in the United Kingdom - healthcare and information and communication technologies (ICT).

Successful ageing at work

In the last two decades a plethora of studies have explained the processes and effects of age-related intra-individual changes on work behaviours. Over the life course individuals experience developmental changes in their physical abilities, fluid (i.e. cognitive capacity) and crystallised (i.e. knowledge and experience) intelligence, personalities, and most notably in their motivation (Warr, 1993; 2001; Salthouse, 2010; Wang et al., 2012; Kanfer & Ackerman, 2004; Roberts et al., 2006). The degree of such changes are presented varies significantly across individuals and depends on many other factors beyond age (e.g. an individual's heredity, lifestyle, physical activity and environment) (Warr 1993; 2001).

Therefore, understanding the effects of mean intra-individual age-related changes and the potential range of inter-individual differences in a work context may support employing organisations in the development of effective strategies for managing late careers.

Age-related changes in work motivation are addressed, albeit indirectly, by theories of life-span development. They suggest that adaptation is a proactive process which involves self-regulation, reflected in life management strategies applied by individuals in their attempts to cope with changes in their environment (such as loss and gain of resources, success and failure in the achievement of goals). Most relevant for our purposes are the theories of Selection, Optimization and Compensation (SOC) (Baltes & Baltes, 1990) and Socioemotional Selectivity Theory (SES) (Carstensen et al., 1999). SOC proposes that individuals can successfully adapt to age-related changes through using three types of personal strategies: selection, optimization and compensation. Furthermore, there is good evidence that the use of SOC strategies can enhance workers' performance and well-being, and that it becomes particularly important with age (Abraham & Hansson, 1995; Müller et al., 2012; Ouwehand et al., 2007, Taneva et al., in press).

SES emphasises the fundamental role of perception of time in the selection and pursuit of (particularly) social goals. With increasing age, as time becomes perceived as more limited, an individual's priorities may shift from long-term knowledge-related goals (e.g. learning) to short-term emotional goals (e.g. focusing on meaningful activities and/or relationships) (Carstensen et al., 1999; Carstensen et al., 2011). Kanfer and Ackerman (2004) extend the life-span propositions further by introducing a framework for understanding age-related changes in work motivation. Overall, they suggest that work motivation does not decline at older ages, though workers' priorities tend to change over time and with age (e.g. from extrinsically to intrinsically rewarding job features, such as supporting colleagues and transferring work knowledge) (Kanfer & Ackerman, 2004; Kooij et al., 2011, Taneva et al., in press).

The concept of "successful ageing" suggests an individual's good health and vitality over the life-span and, in this sense, is the individual's capacity to thrive. One interpretation of successful aging is as a developmental process where growth is still possible (Zacher, 2015). Porath and colleagues (2012) introduce the construct of "thriving" in a work context as "...the psychological state in which individual's experience both a sense of vitality and learning" (Porath et al., 2012, p. 250). Theoretically, thriving suggests the individual's

orientation towards growth and successful adaptation. Empirically, thriving has been shown as related to positive work outcomes, such as well-being, organisational commitment and high job performance (Porath et al., 2012; Spreitzer et al., 2012). It is also believed that experiences of thriving at work are likely to decline at older age (Porath et al., 2012). However, in a recent qualitative study with 37 older workers we found that most participants experienced thriving in the workplace and that those experiences were positively associated with certain types of work environment (Taneva et al., in press).

Job design and work outcomes in late career

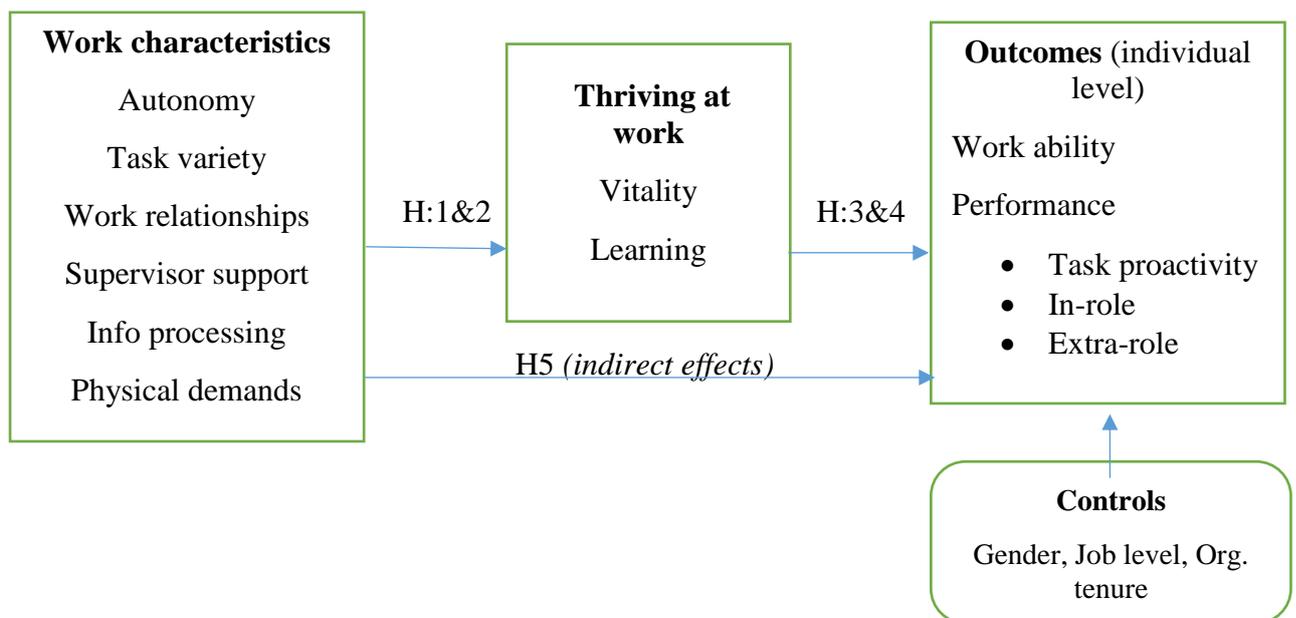
The Job Demands-Resources Model (Bakker & Demerouti, 2007) looks at the effects of two large groups of factors – job demands (e.g. unfavourable physical environment, high work pressure, emotional demands) and job resources (e.g. social support, job autonomy, performance feedback) on two major processes – employee burnout and engagement. Ultimately, employees' burnout and engagement will have effects on their work performance. (Bakker & Demerouti, 2007; Schaufeli & Bakker, 2004). Therefore, identifying the right match between job demands and resources may facilitate workers' performance at all career stages.

From a job design perspective, various job characteristics are expected to have effects on individuals' work behaviours. Warr (1993) points out the importance of identifying those jobs in which older age is either a benefit or a limitation and implementing procedures which could support adaptability among older workers. Based on the life-span development approach to work motivation and the sub-scales of the Morgeson and Humphrey's (2006) Work Design Questionnaire, Truxillo and colleagues (2012) propose the potential effects of three subgroups of job characteristics (task, knowledge and social) on work engagement, job satisfaction and performance of workers from different age groups (younger, mid-age, and older). For instance, they suggest that some job characteristics such as job autonomy, task significance, skill variety, and social support may be particularly preferred by older (compared with younger) workers and, therefore facilitate positive work outcomes particularly in late career, while other characteristics (e.g. information processing and job complexity) may appear rather undesirable for older workers. Only a few studies (e.g. Zaniboni, Truxillo, & Fraccaroli, 2013) have tested some of these hypotheses empirically so far. In addition, our recent study with older workers from two countries (UK and Bulgaria)

and two industrial sectors (healthcare and ICT) was the first one to look at associations between job design characteristics and thriving in the workplace. We found positive associations between employees' experiences thriving at work and some job design characteristics, such as autonomy and social support. This suggests that the relationship between job design characteristics and positive work outcomes (e.g. performance) may be mediated/influenced by workers' experience of thriving.

There is no consistent evidence about the associations between age and work performance (Warr, 1993; Ng & Feldman, 2008). This is partly a reflection of the different conceptualisations of work performance across different studies, but also due to the effects of the interplay between intra-individual age-related changes and environmental characteristics. Also, ageing may have different types of impacts on different aspects of performance (Backes-Gellner et al., 2011). Therefore, when examining older workers' performance, it is important to look at various performance facets. In addition, closely related to the construct of "work performance" is the "work ability index" (WAI) (Illmarinen et al., 2005), which is a general indicator of the extent to which an individual is able to perform in the workplace. As WAI reflects the changes in both personal resources and work environment, it is a reliable indicator of the individual effectiveness at all career stages.

Figure 1. Conceptual model



Overall, we suggest that *thriving at work* through both of its dimensions (vitality and learning) *will mediate the relationships between work characteristics and work outcomes* (work ability and performance) – H5.

Work characteristics and experiences of thriving in the workplace

H1: Higher levels of autonomy and social support (both work relations and supervisor support) will lead to increased experiences of thriving at work (vitality and learning) for older workers.

H2: Higher levels of task variety, information processing and physical demands will lead to decreased experiences of thriving at work (vitality) for older workers.

Thriving at work, workability and performance

H3: Higher levels of thriving a work (vitality) will lead to higher work ability.

H4: Higher levels of thriving at work (vitality and learning) will lead to higher task proactivity, in-role and extra-role performance.

Also, we assume that factors such as gender, job/role level and organisational tenure may act as control variables in this model.

Method, anticipated outcomes and contributions

Our conceptual model will be tested in two studies in two industrial sectors (health and ICT), data for which were collected through an on-line survey between September 2014 and May 2015. We have chosen these two sectors, because of the anticipated differences between them in terms of workforce composition, management strategies, work content, etc. (Schwartz-Woelzl & Healey, 2007; HOSPEEM, 2013). Thus, we can explore a larger range of variables. For the first study we received 539 valid responses from older workers in a large multi-national private ICT organisation, based in the UK. Preliminary analyses indicate that the mean age of sample 1 is 57.54 years ($SD = 2.29$). Almost 80% of the participants are male and about 12% have been in the same organisation for more than 10 years. The sample in study 2 includes 290 participants from two large public healthcare organisations in the UK.

The mean age is 58.5 (SD = 3.35), most participants (78.3%) are female and 30% have been working in the same organisation for over 10 years.

We use a range of adapted versions of well-established instruments in order to measure work design characteristics (Morgeson & Humphrey, 2006), thriving at work (Porath et al., 2012), work ability (Ilmarinen et al., 2005; Ahlstrom et al., 2016), task proactivity (Griffin et al., 2007), in-role and extra-role performance (Lynch et al., 1999). Preliminary results indicate good internal consistency indexes of the used measures (Cronbach alphas ranging between .81 and .92).

In order to test our hypotheses, we are going to apply a series of Structural Equation Modelling (SEM) analyses using Lisrel 8.71. We are going to follow the approach proposed by Anderson and Gerbing (1988) in order to estimate the measurement and structural models in two separate steps. The success of this approach has been demonstrated in previous studies in the field of organisational behaviour and management (e.g. Boehm et al., 2014). In the first step we are going to carry out a simultaneous confirmatory factor analysis for the study variables in order to develop a measurement model. In the second step we are going to test the structural model that will incorporate our research hypotheses. Indirect effects will be tested through mediation analysis (Zhao et al., 2010). In order to estimate the levels of equivalence between the models identified in studies 1 and 2 we will undertake invariance testing (Milfont & Fischer, 2010).

As hypothesised, we expect to identify the paths through which certain work characteristics will ultimately have effects (both positive and negative) on late career workers' work ability and, ultimately, performance. These relationships will be interpreted with a particular focus on individuals' resourcefulness captured through workers' experiences of thriving (i.e. vitality and learning). Preliminary analyses indicated patterns of fully and partially mediated relationships of job design and work characteristics with work ability and individual performance indicators. The mediation effects can be attributed to individuals' perceptions of vitality and/or learning/development in the workplace. In addition, there are significant differences in the patterns of these relationships across the two industrial sectors, which suggests the role of industry specific factors.

Our main theoretical contribution will be an integrated model of the individual, job-level and (broader) environmental factors that shape workers' late career lives. This model will not just complement previous findings within major theoretical frameworks from a variety of

academic disciplines (e.g. life-span theories, job design, JD-R model, positive organisational behaviour), but will shed light on relationships between constructs that have never been explored before (e.g. job design characteristics and thriving, thriving and work performance, etc.). Future research may incorporate new cultural, economic, organisational and demographic variables, so that our findings can be extended to various countries, sectors, types of organisations and different age groups of workers. From an applied perspective, the proposed model is highly relevant to organisational management practice. Employers will be provided with guidance about how to best support their older workers and, overall, how to manage their multi-generational workforce most effectively. In addition, employees will be offered insights into how to successfully manage their late careers.

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