

Older workers' motivation to continue to work: five meanings of age.

A conceptual review

Dorien Kooij¹, Annet de Lange², Paul Jansen¹, Josje Dijkers¹

¹ VU University Amsterdam, Amsterdam, The Netherlands

² University of Groningen, Groningen, The Netherlands

Number of words: 7231 (excl. tables and figures, references and abstract)

Correspondence to:

Dorien Kooij: VU University Amsterdam, Department of Management and Organization, De Boelelaan 1105 (Room 3A-42), 1081 HV Amsterdam, email: tkooij@feweb.vu.nl, tel : 020 – 598 6187

Abstract

Purpose: Little is known about the motivation for older workers to work and to remain active in the labor market. Research on age and motivation is limited and, moreover, conceptually diverse. In this study, we address age-related factors that influence the work motivation of older workers. More specifically, we examine how various conceptualizations of the age factor affect the direction and termination of the motivation to continue to work of older workers.

Methodology: A literature review of age-related factors and motivation to continue to work.

Findings: Results from 24 empirical and 9 conceptual studies indicate that most age-related factors can have a negative impact on the motivation to continue to work of older people. These findings suggest that age-related factors are important in understanding older workers' motivation to continue to work and that further research is needed to more fully understand the underlying processes that govern how these age-related factors influence the motivation to continue to work.

Research limitations/implications: Based on the aforementioned findings, we were able to formulate a research agenda for future research, namely: 1) a need for a meta-analysis on age and motivation to determine the actual effect sizes, 2) additional theoretical attention to the underlying age-related processes, 3) more psychometric studies examining the operationalization and measurement of the age-related variables, and 4) additional empirical research on age-related variables and motivation.

Practical implications: Age-related factors identified in this study, such as declining health and career plateaus, should be addressed by HRM policies. HRM practices that could motivate older workers to continue to work include ergonomic adjustments and continuous career development.

Originality/value of paper: Research on age and motivation is limited and conceptually diverse. This paper is one of the first studies to explore the relations between different conceptualizations of age and motivation.

Keywords: Aging, age-related factors, motivation to continue to work, HRM

Paper type: Conceptual paper

Introduction

In many countries, the participation rate of older workers in the labor market is low. At the same time the population and thus the potential workforce of these countries are aging (OECD, 2005). The Netherlands sees this pattern: the participation rate of older people (55+) in the Dutch labor market was 41,7% in 2006 and, in 30 years time, one-fourth of the population is expected to be over 65 years of age (this is now 14,5%; CBS Statline). Such demographic changes will have economic and social consequences, such as a necessary increase in public expenditure on pensions, health, and long-term care. It is anticipated that those in employment will have to support a growing number of people outside the labor market, with the dependency ratio (ratio of the population aged 65 and over to the population aged 20 to 64) virtually doubling from 22% in 2000 to 40% in 2050 (OECD, 2005). With fewer workers available relative to non-workers, there is likely to be a reduction in national savings and investment and, as a result, the upward trend in productivity, economic growth, and standards of living will suffer (Committee for Economic Development, 1999). Moreover, the potential Dutch workforce is expected to shrink by 10% in the period up to 2035 (Lokhorst, 2003), resulting in a tight labor market, shortage of skilled and knowledgeable employees, and a scarcity of young human resources for industry.

The low participation rate of older people in the workforce is partially caused by previous government policies. Starting in the late 1970s and early 1980s, when the Dutch economy had to cope with high unemployment rates, policy has been to use the social security system to remove older workers from the workforce in order to free up jobs for young people. In 2002, 13% of people aged 50-64 were on disability benefits, 6% on early retirement schemes, 3% on welfare support, and 3% on unemployment benefits (OECD, 2005). In 2000, the average effective retirement age was 61 for men and 59 for women. The Dutch government is currently enhancing incentives (and reducing disincentives) to encourage older workers to remain in paid employment. As a consequence, the 55-64 age-group is expected to make up 25% of the potential workforce in 2020 compared to 15% in 2000 (Lokhorst, 2003). In order to ensure that adequate human resources continue to be available in the future, organizations will require HRM policies that match the needs of older workers and that exploit the full potential of an aging workforce.

However, there have only been a few studies that examine the motivation of older people to work and to remain active in the workforce. Empirical research regarding motivation has been focused on young people and the factor of age has often played only a minor or confounder role in these studies (see, for example, Eerde & Thierry, 1996; Latham & Steele, 1983; Locke & Latham, 2002; Wegge & Haslam, 2005). As a consequence, in an attempt to fill this knowledge gap, this explorative conceptual paper examines age-related factors that can influence the motivation to continue to work. Before addressing the specific research questions of this paper, we will discuss in more detail the conceptualization of aging, work motivation, and the relationships between these variables.

Conceptualizing age The term “older worker” has been used to refer to workers from the age of 40 to those aged over 75 depending on the purpose and field of study (Bourne, 1982; Warr, 2000). In studies concerning labor market participation, the term “older worker”

usually refers to workers aged 50 or 55 and above. This threshold is chosen because in many countries, including the Netherlands, this age range features a decline in the participation rate in the labor market (OECD, 2005). Researchers examining older people in organizations, on the other hand, often put the threshold at 40 or 45, seeing ‘old’ as referring to obsolete knowledge, skills, and attitudes (Muijnck & Zwinkels, 2002). However, a number of researchers have suggested that ‘chronological age’ may be an insufficient operationalization of the factor age in the work setting (Avolio, Barrett, & Sterns, 1984; Settersten & Mayer, 1997; Sterns & Alexander, 1987; Sterns & Miklos, 1995; Wolf, London, Casey, & Pufahl, 1995).

Aging refers to changes that occur in biological, psychological, and social functioning over time and it therefore affects each individual on the personal, organizational, and societal levels (cf. De Lange et al., 2006; Settersten & Mayer, 1997; Sterns & Miklos, 1995). Individuals with the same chronological age may differ in terms of health, career stage, and family status. De Lange et al. (2006) have recently highlighted the complex operationalization of aging at work, and referred to the helpful approaches suggested by Sterns and Doverspike (1989) to conceptualize age in the workplace:

- *Chronological age*, refers to one’s calendar age;
- *Functional age*, is based on a worker’s performance, and recognizes that there is a great variation in individual abilities and functioning at all ages. It reflects cognitive abilities and physical health;
- *Psychosocial age*, refers to the self perception and the social perception of age. The social perception of age involves age norms applied to an individual with respect to an occupation, company, or society, and stereotypes;
- *Organizational age*, refers to years of service, career stage, skill obsolescence and age norms within the company;

- the concept of *Life span* age borrows from a number of the above approaches but emphasizes the intra-individual changes as individuals move through adulthood and older adulthood. This approach, for example, refers to life stage or family status (De Lange et al., 2006; Sterns & Doverspike, 1989; Sterns & Miklos, 1995).

A few studies have examined these different conceptualizations of age. Cleveland and Shore (1992), for example, found that employees who perceive themselves to be older than most of the people in their work group, exhibited more job involvement, job satisfaction, and organizational commitment. Further, De Lange et al. (2006) examined the impact of age in occupational health research and found that different age groups show significant differences in important age-related variables. In this paper we use the aforementioned conceptualizations of age in distinguishing age-related factors that influence the motivation to work of older people.

The conceptualization of work motivation. Motivation has been viewed as both an independent and a dependent variable. As an independent variable, various theories have been put forward to explain motivation. Atkinson (1964), for example, defines motivation as the contemporary (i.e. immediate) influence on direction, vigor, and persistence of action; while Vroom (1964) defines it as a process governing the choice made by an individual among alternative forms of voluntary activity. Pinder (1998) describes work motivation as a set of energetic forces that originate both within as well as beyond an individual's being that initiate work-related behavior, and determine its form, direction, intensity, and duration.

As a dependent variable, motivation has been defined as 'intention to behave' (Jansen, 2002). Notwithstanding all the different theories and definitions, according to Landy and Becker (1987), there is general agreement that motivated behavior consists of any or all of the following behavioral elements: initiation, direction, persistence, intensity, and termination. In this exploratory paper, we will examine motivation as a dependent variable and define it as

‘motivation to continue to work’, because with aging the ‘motivation to continue to work’ becomes more relevant than, and starts to supersede, the ‘motivation to work’. We will address the behavioral elements highlighted in Figure 1, i.e. direction and termination. We focus on these behavioral elements, because the direction (e.g. values and needs) of motivation to continue to work is likely to change with age, and the termination (e.g. retirement) of motivation to continue to work becomes a relevant option for the older worker.

< Insert Figure 1 >

Aging and the motivation to continue to work. As mentioned earlier, there is a paucity of studies that examine the motivation of older people to continue to work and to remain active in the workforce. The limited research on age and work motivation does reveal that age moderates the relationship between various work characteristics and motivation to work. Warr (1997) summarized the limited empirical evidence on the motivational effects of key job features at different ages, and concluded that, over time, the importance attached to high job demands, job variety, and feedback is likely to decrease, while the importance attached to job security and physical security is likely to increase. Various other studies have found that, with older workers, job satisfaction is more closely related to intrinsic factors or internal rewards of work compared to younger employees (Cohn, 1979; Gruenfeld, 1962; Kanfer & Ackermann, 2004; Saleh & Otis, 1964; Schwab & Heneman, 1977; Stagner, 1985; Valentine, Valentine, & Dick, 1998; Vallerand, O’Connor, & Hamel, 1995).

Nevertheless, the general perception is that there have been few studies that have examined the impact of aging on work motivation (Bourne, 1982; Kanfer & Ackerman, 2004; Lord, 2002, 2004). Furthermore, according to Stagner (1985) and Cooper and Robertson (1991) there has been little research (e.g. Arvey & Warren, 1976; Heneman, 1973;

Huddleston, Good, & Frazier, 2002; Linz, 2004; Lord, 2004) on age effects in expectancy motivation or in any other motivation theory.

Rhodes (1983) reviewed more than 185 studies in an attempt to examine age-related differences in internal work motivation and found only a few relevant studies (Aldag & Brief, 1977; Hall & Mansfeld, 1975; Warr, Cook, & Wall, 1979). These studies reported a positive, albeit weak, relationship between age and internal work motivation. Lord (2004) examined the work motivation of older knowledge workers and found that the primary reasons for older workers to remain active in the workforce are that they enjoy working, derive satisfaction from using their skills, gain a sense of accomplishment from the job they perform, and enjoy the chance to be creative. According to Higgs, Mein, Ferrie, Hyde, & Nazroo (2003), older workers continue to work because of financial reasons, the work itself, or their traditional work ethic. Leviatan (1992) found that older kibbutz workers prefer jobs that satisfy higher order needs to jobs offering better physical conditions or convenience. Lord (2002) found that older engineers with insufficient income to retire, work to satisfy the first and second level needs in terms of Maslow's hierarchy ("hygiene factors"), whereas older engineers with sufficient income to retire are primarily motivated by needs that correspond to the third and fourth levels of Maslow's hierarchy ("motivators"). Linz (2004) examined job motivators of Russian workers and found that pay is the most important job motivator for all age groups. Overall, Linz found no major differences in the ranking of job motivators between younger and older respondents, although older workers did place higher value on pay and security and the respect and friendliness of co-workers. Finally, Paynter (2004) in a study on the motivational profiles of teachers found that teachers aged 50 and above have significantly higher combined (extrinsic, intrinsic, and moral) motivation scores than teachers aged 20 to 39. Conversely, other studies (including Mehrabian & Blum, 1996; Okun & Di Vesta, 1976; Veroff, Atkinson, Feld, & Gurin, 1960) found that achievement motivation declines with age.

Overall, it appears that age and motivation are factors in a range of theories, and as such are conceptualized in different ways. In some studies, motivation is conceptualized as need, and age is conceptualized as life stage; whereas in other studies motivation is conceptualized as intrinsic motivation, and age is conceptualized as calendar age. Given this lack of consistency, in this paper we examine the various conceptualizations of age recently proposed by De Lange et al. (2006), in an attempt to distinguish specific age-related factors that influence the direction and termination of motivation to continue to work in older workers through the following research questions:

1. How does chronological age affect the motivation to continue to work of older workers?
2. How does functional age affect the motivation to continue to work of older workers?
3. How does psychosocial age affect the motivation to continue to work of older workers?
4. How does organizational age affect the motivation to continue to work of older workers?
5. How does life span age affect the motivation to continue to work of older workers?

Figure 2 summarizes our research framework and examined relationships.

< Insert Figure 2 >

Method

We aimed to answer the aforementioned research questions by carrying out a literature review of studies we could find reporting on age-related factors and work motivation as defined above. Relevant studies were identified through a database search. The databases searched were: PsycInfo (1872 – 2006), Eric (1966 – 2006), Web of science (1945 – 2006), and

Picarta. We did not limit ourselves to a particular time frame because we consider all studies potentially relevant. The keywords used in the search are presented in Table I, and we selected only English publications.

< Insert Table I >

To expand our literature base, we also searched the references of the literature found in the keyword search, for other relevant studies which could be included.

The literature search resulted in $N = 33$ ¹ articles in total, including empirical ($N = 24$), and conceptual ($N = 9$) studies. Subsequently, we identified the empirical and conceptual findings and ideas contained in these studies that we could use to answer our research questions. Table II provides information on the empirical studies found, including: a) the sample used, b) the independent variable, c) the dependent variable, d) the measurement instrument used to measure the age-related variable, and e) the results. Table III presents information from the conceptual studies found on the independent variable, the dependent variable, the theory or method behind the study, and the results. We have distinguished between studies that examine the direction of motivation and those that examine the termination of motivation to continue to work.

< Insert Tables II and III >

¹ Since some of these articles measured or addressed more than one conceptualization of age, the reported percentages in the results paragraph can add up to more than 100%

Results

Before discussing the relevant results for our research questions, we will discuss the descriptives of our selected empirical studies. Table II reveals that 14 studies (58%) examine variables that measure the direction of motivation, and 10 studies (42%) examine the termination of the motivation to continue to work. Further, the samples range from blue collar to white collar workers. Professionals (such as accountants) and salespeople are used mainly (in 56% of the studies) in studies examining indicators of organizational age, whereas civil servants are used often (in 33% of the studies) in studies examining indicators of functional and life span age. Further, 10 (42%) of the 24 empirical studies include only older workers (starting at 45+) or retirees in their samples. These studies examine particularly the calendar, functional and life span age.

The measurement instruments used to measure the age-related variables particularly consist of 1 or 2-item self-rated age (13%), organizational or job tenure (17%), health (25%), and family status (25%). Only 5 studies (21%) use a multi-item scale to measure the age-related variable: two studies on career stage (Cron & Slocum, 1986; Ornstein, Cron & Slocum, 1989), one study on obsolescence (Shearer & Steger, 1975), one study on health status (Saba & Guerin, 2005) and one study on self perception (Lang & Carstensen, 2002). Cronbach's alpha of these multi-item scales ranged from .83 to .94 in these studies.

Results question 1: The impact of chronological age on motivation to continue to work ($N = 4$ relevant studies). In the chronological age approach used in four of the 33 studies (12%), "older workers" are defined by calendar age (see De Lange et al., 2006). First, the Dutch government uses calendar age to set the mandatory retirement age at which one becomes entitled to the state old age pension (AOW). This age is currently set at 65 years of age, thus providing a strong monetary incentive to work until that age. However, until very

recently, funded early retirement schemes resulted in an effective average retirement age of only 60. Furthermore, the social security system was used to remove older workers from the workforce in an attempt to create more jobs for younger unemployed people. In an attempt to raise the effective retirement age and prolong the monetary incentive to stay at work, the government has introduced a number of reforms, such as the abolishment of financially attractive early retirement schemes.

The monetary incentive notwithstanding, Ekerdt and DeViney (1993) have suggested that as individuals approach a fixed retirement age, they may come to view their jobs as a burden and become less psychologically involved. Furthermore, having a mandatory retirement age could make older people feel less competent and more dependent on others, with potentially negative consequences for motivation (Vallerand et al., 1995).

Further, many organizations use calendar age to define older workers in their company policies. Existing HRM policies for older workers generally consist of collective measures for workers in a specified age-group - with the purpose of accommodating these 'older workers' (e.g. reduced workload, additional leave and pre-retirement planning) (Remery, Henkens, Schippers, Doorne-Huiskes, & Ekamper, 2001; Thunissen, 2005). These measures are often combined with a policy of reducing investment in the training and development of older workers, with most measures designed to encourage older workers to stop working, or at least to reduce their hours (OECD, 2005). As a consequence, such policies could easily be seen as having a negative effect on the motivation of the older workers involved.

Finally, calendar age determines which workers are offered generous early retirement schemes and other attractive exit routes in times of downsizing and reorganization. Such financially attractive arrangements clearly influence older workers in their decision to retire early (Higgs et al., 2003; Vries, Willemsen & Nauta, 2002), and thus their decision not to continue to work. To summarize, calendar age is likely to have a negative impact on the

motivation to continue to work, because calendar age, although it is disputable, determines eligibility for a whole range of schemes such as additional leave and other accommodative measures, attractive exit arrangements and (pre)-retirement planning.

Results Question 2: The impact of functional age on motivation to continue to work

In using this approach, “older workers” are defined by psychological age (determined by cognitive abilities) and biological age (determined by physical health). Tables II and III show that $N = 8$ of the 33 (24%) studies examined indicators of functional age in relation to motivation to continue to work.

Psychological age. Warr (1992, 2001) and Kanfer and Ackermann (2004) reviewed literature on cognitive abilities and age, and found that cognitive abilities change with age: crystallized intellectual abilities, such as general knowledge and verbal comprehension, increase, and fluid intelligence, such as working memory, abstract reasoning, and speed of reaction decrease. Kanfer and Ackerman (2004) propose that these changes affect motivation by changing the amount of effort required to sustain performance. However, this compensatory motivational strategy will be undermined by the negative effects on the psychological factors (e.g., self-efficacy) that normally support motivation. Furthermore, in tasks with high demands on fluid intelligence, motivation among older workers may be diminished as the discrepancy between comfortable effort level and the demands of the task increases (we will return to this point in the next paragraph). In tasks demanding both fluid and crystallized intelligence, the potential drop in work motivation can be attenuated by changing the working role to reduce the demands on fluid intelligence. Overall, previous studies are inconclusive regarding the associations between psychological age and motivation; cognitive abilities can have either a positive or a negative impact on motivation to continue to work.

Biological age Physical abilities decline with age (Greller & Simpson, 1999; Sterns & Miklos, 1995) and various studies have shown that physical health affects motivation. For example, Holahan (1988) found that health correlates positively with achievement motivation, and Vallerand et al. (1995) found that health correlates positively with self-determined extrinsic motivation. Further, other research has shown that health limitations have a strong impact on the decision to retire early (Anderson & Burkhauser, 1985; Hayward, Grady, Hardy, & Sommers, 1989; Higgs et al., 2003), and thus on the motivation to continue to work (Lund & Borg, 1999). Conversely, another study, among civil servants, indicated that personal health played only a modest role in retirement decisions (Henkens & Tazelaar, 1997). A possible explanation for this apparently perverse finding is that the lost physical capabilities are of less importance in such physically undemanding professions, and that minor accommodations in the work environment and compensatory personal coping strategies can overcome the effects of physical and psychological decline (Greller & Simpson, 1999). Avolio, Waldman, and McDaniel (1990) would seem to support such an argument in that they found that the type of occupation did indeed influence the relationship between age and performance. Another study, across a wide spectrum of jobs, concluded that there was no significant difference between the job performance of older and younger workers (Warr, 1992). Finally, on this issue, it has been suggested that relative physical and psychological decline may result in negative thoughts and feelings about the self (Demo, 1992). To summarize, the overall picture that emerges is that health has a positive relationship with achievement, self-determined extrinsic motivation, and the concept of self, but a negative relationship with retirement. Therefore, biological age is likely to have a negative impact on the motivation to continue to work.

Question 3: The impact of psychosocial age on motivation to continue to work

Tables II and III show that $N = 7$ of the 33 studies examined indicators of psychosocial age (21%). Psychosocial age refers to one's own and the social perception of age.

Self perception of age In this view, psychological aging refers to a shift in the individual's time orientation from emphasizing the "life lived from birth" (past self-image) to the "life left until death" (future sense of self) (see Neugarten, 1968). Psychological aging has a number of consequences. Firstly, one's self perception of age is likely to affect self-efficacy which, according to Bandura (1977) and Korman (1970), lies at the heart of an individual's motivation to act or perform.

Secondly, Carstensen (1995) found that with psychological aging the motivation for having contact with others shifts from gaining resources (instrumental) to obtaining affective rewards (emotional satisfaction) and supporting one's own identity. As a result, older workers face the marketplace with fewer resources than workers who are actively maintaining a network of instrumental relationships.

Thirdly, Lang and Carstensen (2002) found that generativity motives rise with psychological aging. This suggests that generative jobs or tasks, such as teaching and mentoring (Farr, Tesluk, & Klein, 1998; Pratt, Norris, Arnold, & Filyer, 1999), are likely to motivate older workers (Kanfer & Ackerman, 2004).

Finally, according to Kanfer and Ackerman (2004), as workers age, preference for activities that support positive affect, one's self-concept (see also Gecas, 1982; Korman, 1970; Leonard, Beauvais, & Scholl, 1999; Maurer, 2001) and identity increases. This suggests that older people will be more motivated in jobs that offer opportunities for positive events or a strengthened sense of identity, but will have a lowered motivation when it comes to performing new tasks. Moreover, the utility of effort can be expected to decline with age because expending effort is more likely to be associated with emotional exhaustion, stress,

and negative affect. Overall, since a self-perception of being ‘old’ (past self-image) has a negative effect on motivation to act and perform, on motivation to perform new tasks, and on the utility of effort, a self-perception of aging is likely to have a negative impact on motivation to continue to work.

Social perception of age Social perception involves concepts such as age norms and stereotypes. Age norms are described by Lawrence (1988) as widely-shared beliefs about the standard or typical age considered appropriate for individuals in a certain role or with a certain status. There is ample evidence in the literature for the existence of normative age groups within organizations. Several studies (Finkelstein, Burke, & Raju, 1995; Martin & Strauss, 1956; Panek, Staats, & Hiles, 2006; Sofer, 1970) found shared beliefs about age-related career timetables and about typical jobs for ‘older people’ versus ‘younger people’.

These age norms appear to affect a wide range of employment decisions. Employees who are lagging behind age-based career patterns are less likely to receive future promotions and good performance evaluations (Cleveland & Shore, 1992; Lawrence, 1987; Martin & Strauss, 1956). Further, Hwalek, Firestone, and Hoffman (1982) have argued that the social pressure resulting from age norms is the strongest factor in the aging process and the decision to retire (see also McCann & Giles, 2002).

In addition, managers may hold stereotypical views of older workers (e.g. strong work ethic, unwilling or unable to learn new skills, and unable to change or adapt) (Lord, 2004; Greller, & Simpson, 1999; Sterns & Miklos, 1995; Visser, Henkens, & Schipper, 2003). Rosen and Jerdee (1976) examined the influence of age stereotypes on managerial decisions and found that stereotyping of older employees leads to discriminatory decisions about these workers (see also Chiu, Chan, Snape, & Redman, 2001). The perception of older employees that their actions are no longer instrumental for achieving career advancement as a result of this managerial bias, can have a negative influence on their motivation to continue to work.

Limited opportunities for training and development (Greller & Simpson, 1999; OECD, 2005) and a lack of feedback on performance can further reduce the motivation of older employees. Eventually, such stereotyping could affect older workers' self-perception or self-efficacy if they start to believe these stereotypes.

Thus, it is possible that diminished motivation is not a direct result of aging, but a result of changes in managerial attitudes toward and the treatment of older employees, resulting in a self-fulfilling prophecy: limited opportunities for professional development and training will diminish motivation, skills and future employment opportunities for older workers, thereby validating the stereotypes held by managers (Greller & Simpson, 1999). Overall, it seems that a social perception of being 'old' increases the social pressure to retire, and decreases the likelihood of being promoted, having your performance highly evaluated, and being offered opportunities for training and development. These effects are likely to have a negative impact on one's motivation to continue to work.

Results Question 4: The impact of organizational age on motivation to continue to work

Tables II and III shows that $N = 12$ of the 33 studies (36%) examined indicators of functional age. Organizational age is used to refer to variables like the years of service (tenure) and career stage.

Tenure The primary incentive mechanism in organizations is that of tournament promotion. In economic models, employees are seen as competing to secure promotions to increasingly more highly compensated jobs with greater authority and autonomy (Carmichael, 1983; Lazear & Rosen, 1981). However, the opportunities for such tournament promotions have largely disappeared for older workers, who have reached a point where there are reduced prospects of further promotion. As a consequence, steep age-earnings profiles in which younger workers are paid less than they are worth, and older workers more, are used to

provide positive incentives to continue to work for those tenured workers who would otherwise have reached a plateau in earning potential (Lazear, 1998; and for other reasons, see Hutchens, 1989).

Our search revealed that few studies have examined the relationship between organizational tenure and work motivation. Cook and Wall (1980) and Kuvaas (2006), for example, found a positive relationship between organizational tenure and intrinsic motivation. However, we have found insufficient data to enable us to draw firm conclusions as to which effect is the strongest; the positive effect resulting from steep earning profiles or the negative effect resulting from career plateaus.

Career stage Individuals progress through distinct occupational stages in their organizational careers (Hall & Nougaim, 1968; Super, 1984). Super (1984) proposed a career model with a sequence of stages, starting with one labeled trial (with an emphasis on identifying interests, capabilities, fit, and professional self-image), through establishment (with an emphasis on growth, advancement, and stabilization), to maintenance (emphasis on accomplishments achieved earlier and maintaining one's self-concept), and finally to decline (emphasis on developing a new self-image independent of career success). The model predicts that job attitudes should vary with career stage accordingly (Super, 1984).

Many studies have shown that job attitudes, such as psychological needs and vocational preferences, do indeed differ with career stage and have generally found positive relationships between career stage and work commitment, job involvement, job and rewards satisfaction, and negative relationships between career stage and turnover intentions (e.g., Adler & Aranya, 1984; Cron & Slocum, 1986; Lynn, Thi Cao, & Horn, 1996; Morrow & McElroy, 1987; Ornstein, Cron, & Slocum, 1989).

However, we found no studies which explicitly examined the impact of career stage on work motivation. London (1990) did describe a model for understanding career motivation in

later career in which it was argued that career motivation includes three dimensions: career identity, career insight, and career resilience. Career identity is the extent to which people identify themselves with their work role. Career insight is how realistic people are about themselves and their careers. Career resilience is the extent to which people resist career barriers and this determines an employee's persistence in attaining career goals. Noe, Noe, and Bachhuber (1990) examined the model proposed by London and found that career resilience is significantly higher in the later stages of a career than in the early stages, implying higher career motivation in later career stages.

Finally, according to Hansson, DeKoekkoek, Neece, and Patterson (1997), the accomplishment of one's late career goals can result in detachment from a career. To support a worker in remaining psychologically young through a continued sense of 'becoming' (future sense of self, see previous paragraph), an open career path should be stimulated (Raynor, 1982). However, we have found insufficient information with respect to career stage and motivation to draw firm conclusions about the nature of this relation.

Skills obsolescence According to Fossum, Arvey, Paradise, and Robbins (1986), obsolescence can be the result of a deterioration in present skills or the failure to acquire new ones as job requirements change. Older workers tend to have longer work histories, over which skills and knowledge can deteriorate. In addition, older workers may not have had, or failed to take, opportunities to acquire the new skills necessary to meet changing job requirements, and they may also have lowered expectations that the acquisition of new skills will result in valued rewards (Fossum et al., 1986; Gist, Rosen, & Schwoerer, 1988). Therefore, skills obsolescence can be expected to increase with age. This view is to some extent supported by earlier research (Dalton & Thompson, 1971; Shearer & Steger, 1975).

Unfortunately, no studies have been found that have examined the impact of obsolescence on work motivation. However, Shearer and Steger (1975), albeit with a cross-

sectional research design, did find a negative relationship between five chosen dimensions of motivation, such as career expectancy and need for achievement, and obsolescence. In this study, Shearer and Stegner aimed to identify the determinants of job obsolescence, and found that high need achievement and high levels of organizational participation were the major contributors to nonobsolescence.

Results Question 5: The impact of life span age on motivation to continue to work

Tables II and III show that $N = 9$ of the 33 studies (27%) examined indicators of life span age. According to the life span approach, the age of a worker can be defined by their life stage and family status. Levinson's (1986) life stage model sees adult life as characterized by a linear succession of stages, such as early, middle, and late adulthood, divided into various sub-stages associated with specific tasks to be accomplished, many of which are concerned with career development (comparable to the career stage model of Super (1984)). However, in applying the model, life stage is often operationalized by chronological age in earlier research (e.g. Alderfer & Guzzo, 1979).

Tamir and Antonucci (1981) examined differences in motivation through seven stages of the family life cycle, ranging from single, unmarried adults to parents of grown-up children and found that motivational choices (based on a need for achievement or a need for affiliation) appeared to be remarkably similar and stable throughout the family life cycle. Similarly, Kidd and Green (2006) found that, among their sample of biomedical research scientists, family responsibilities did not have an impact on career commitment and intention to remain in the profession.

On the other hand, the wages, savings, pensions, and benefits, as well as the health and personal desires of a partner, did appear to have a great influence on the retirement decision (see, for example, Hayward et al., 1989; Henkens & Tazelaar, 1997; Saba & Guerin, 2005;

Smith & Moen, 1998). Several of these studies also found that individuals were less likely to retire if their spouses were working.

Finally, according to economic research, the basis for retirement (and thus the related older worker motivation) is that there is a change in the relative value associated with earnings and leisure; specifically, leisure becomes more highly valued as workers age (e.g., Hurd, 1996). The explanation offered for this shift in indifference curves, is that work becomes tougher for older workers as their functional abilities deteriorate (Hurd, 1996), although this explanation is not universally accepted (see biological age above). Alternative explanations include social influences as to the roles one should fill as one ages (i.e., age norms), and within-market discrimination (Parnes, 1988). Higgs et al. (2003) examined the retirement decision and found that indeed one of the reasons to retire is the desire for more leisure time for hobbies and relaxation (referred to as third age exit) (see also, Vries et al., 2002). Overall, the reviewed publications show that the status and views of a partner have a large impact on the decision to retire, and that the increasing value attached to leisure time as one ages can have a negative impact on the motivation to continue to work.

Discussion

Earlier research on aging and motivation is limited and conceptually diverse. This study addressed five conceptualizations of age outlined by De Lange et al. (2006) in an attempt to distinguish specific age-related factors that influence the direction and termination of older workers' motivation to continue to work. The literature review revealed 24 relevant empirical and 9 conceptual studies. In Figure 3, we summarize the results found in this literature review and focus on the relationships between age-related factors and motivation to continue to work.

<Insert Figure 3 >

Figure 3 shows that most age-related factors seem to have a negative impact on the motivation of older workers to continue to work: 1) Calendar age determines eligibility to retirement, financially attractive exit arrangements or reduced workload, regardless of good health, a progressing career, or the value attached to work. This can give older workers a sense of being 'redundant', with potential negative effects on motivation to continue to work. Furthermore, financially attractive exit arrangements encourage the decision to retire; 2) Functional age consists of biological age and psychological age. Biological age is negatively associated with motivation and affects the retirement decision; i.e. poor health increases the likelihood of retirement. Psychological aging (in the functional and in the psychosocial approach) has some important implications for the motivation to continue to work: self-efficacy is likely to decrease, and the direction of motivation to continue to work shifts and focuses on different tasks - as workers age psychologically they seem to prefer tasks demanding general knowledge and verbal comprehension, generative tasks and tasks that support positive affect and the self concept (and avoid new tasks and tasks with high demands); 3) Psychosocial age can further affect the motivation to continue to work through age norms and stereotypes. Age norms and stereotypes can influence management decisions, resulting in a self-fulfilling prophecy: limited opportunities for promotion, training, and development reduce skills (leading to obsolescence), motivation, and the employability of older workers, thereby validating the age norms and stereotypes held by managers. Furthermore, age norms affect the retirement decision; 4) Organizational age has an ambiguous effect on motivation to continue to work. On the one hand, organizational aging results in skill obsolescence, with potentially negative effects on the motivation to continue to work, and increased likelihood to encounter a career plateau or to accomplish one's career

goals resulting in the detachment from a career. On the other hand, organizational aging results in monetary incentives because of steep earning profiles, changing needs, and increased work commitment and career resilience; 5) Life span age influences motivation to continue to work in that the partner's wishes and increased value placed on leisure time encourage the decision to retire.

Overall, the above findings suggest that age-related factors are important in understanding the motivation to continue to work of older workers. According to the aforementioned studies, 6 age-related factors are related negatively, and 3 factors are related ambiguously to motivation to continue to work. As a concluding remark, we would like to point out that the five different meanings of age can also be interrelated; for example, declining health can result in a deterioration of the self concept or increased value placed on leisure time. Furthermore, perceptions fulfill an important role within this interrelatedness; stereotypes lead to discriminatory management decisions, which can result in skill obsolescence, career plateaus, increased value on leisure time, and in deterioration of the self concept if older workers believe these stereotypes apply to them. Consequently, the influence of aging on motivational outcomes may be more complex than earlier research or theory seems to convey. In addition, no motivation theory focuses on or addresses aging (Stajkovic, 2006). Our results emphasize the importance of including age-related factors in conceptualizations and theories about the motivation of workers to continue to work.

Limitations

Before addressing the research agenda and practical implications of our review, we first need to address three important limitations of our study. First, only few empirical and relevant conceptual studies were found, and we are therefore not able to draw strong conclusions on the impact of the various conceptualizations of age on motivation to continue to work.

Furthermore, the review is inconclusive as to how the age-related factors affect the work motivation of older workers; in other words, few studies pay attention to the underlying mechanisms explaining the relationship between age and motivation to work. As a consequence, we cannot explain the mixed (and partly contradictory) results in research on age and motivation, such as why intrinsic motivation increases with age, while achievement motivation decreases. Further empirical research on age and motivation is therefore needed (see research agenda below).

Furthermore, from the literature review, it appears that several factors may intervene in the relationships between the different conceptualizations of age and the motivation to continue to work; for example, health is more likely to have an impact on the retirement decision in physically heavy professions (see p. 13), and stereotypes are more likely to have an impact on motivation when affecting management or supervisor decisions (see p. 16). Finally, the operationalizations of motivation to continue to work differ across the studies reviewed, reducing our ability to compare the results found in these studies.

Research Agenda

Despite of the aforementioned limitations, the strengths of this study are: a) that it is the first conceptual review to examine relevant age-related factors in relation to motivational outcomes for aging workers, and b) that it reveals an important overview of unresolved issues. We can use these unresolved issues to formulate a more specific research agenda for future studies examining motivational factors of older workers:

1. A meta-analysis on age and motivation is needed to determine actual effect sizes and intervening factors between age and motivational constructs, such as goal commitment, expectancy, and achievement and intrinsic motivation; and also between age and intention to retire and intention to learn.

2. Additional theoretical attention should be given to the underlying age-related processes. How can we explain the influence of, for example, social perceptions of managers on motivation to continue to work? In this context, social developmental psychologists also refer to *age schemas* (cf. Montepare and colleagues, 1996; 1998; 2001). According to these theorists, age is a fundamental dimension along which we organize and process information about ourselves and others. Research on subjective age also points to the existence of these age schemas. Since there is no appropriate, systematically-designed, alternative index (Montepare, 1996, p. 117), there have been few studies on the effects of age schemas or other indicators of psychosocial age (cf. Montepare & Clements, 2001). Consequently, more (and preferably experimental) research should be conducted to examine these underlying causal processes in the relation between psychosocial age and motivation to continue to work.

Further, coping style seems to play an important role in the motivation to continue to work. Coping theories distinguish between two different coping responses; responses aimed at changing the stressful situation itself and responses aimed at reframing the problem to fit with external demands or managing the negative emotions aroused by the stressful event (Sorkin & Rook, 2006). However, older workers that are financially dependent upon their work have little options to change the situation. Therefore, their coping style and motivational profile will differ from older workers that are financially independent from their work (see also Lord, 2002). Consequently, future research could also examine older workers' coping style, and its effect on their motivation to continue to work, taking into consideration the extent to which these older workers have alternative options.

Finally, according to Greller and Simpson (1999), with age, individual differences increase because older workers have lived longer and therefore experienced more.

However, research on personality, adult development, and aging (e.g. Caprara, Caprara, & Steca, 2003) seems to disagree with this statement, showing that personality changes across the lifespan (Srivastava, John, Gosling, & Potter, 2003). Such intra- and inter-individual differences should be incorporated in motivation theories.

3. Additional empirical research is needed on the effects of age-related variables on motivation to continue to work. In our explorative review, only 8 of the 33 (24%) selected studies focused on functional age, and only 9 (27%) focused on life span age (see Tables II and III).
4. Further attention should be given to the operationalisation and measurement of especially functional, psychosocial, organizational, and life span age. Psychometric studies on the (relations between) indicators of the different approaches to measure aging at work are still lacking. Furthermore, Tables II and III reveal few measurement instruments that can be used to measure the various conceptualizations of age. A systematic and concise measurement tool to measure all indicators of aging at work remains to be developed.

Practical implications

Our findings have important practical implications for HRM policies and practices. We have identified relevant age-related factors that influence the motivation of older workers to continue to work, that can be addressed in HRM policies. HRM practices that could encourage older people to work longer could involve ergonomic adjustments (e.g. in the work place), job redesign (e.g. mentoring), and continuing career development. These practices have also been recommended (e.g. by CED, 1999; Paul & Townsend, 1993) as part of an age-aware HRM policy, aimed at avoiding age-specific work-related problems by dealing with risks in earlier phases of work life. However, little research has so far been conducted on the

impact of these and other HRM policies and practices on the motivation of older workers to remain in employment.

We hope the results of our review will inspire more practical as well as theoretical attention to motivational issues of the older worker.

Literature references

- Adler, S. and Aranya, N. (1984), A comparison of the work needs, attitudes, and preferences of professional accountants at different career stages, *Journal of Vocational Behavior*, Vol. 25, pp. 45 – 57.
- Aldag, R.J. and Brief, A.P. (1977), Age, work values and employee reactions, *Industrial Gerontology*, Vol. 4, pp. 192 – 197.
- Alderfer, C.P. and Guzzo, R.A. (1979), Life experiences and adults' enduring strength of desires in organizations, *Administrative Science Quarterly*, Vol. 24 No. 3, pp. 347 – 361).
- Anderson, K.H. and Burkhauser, R.V. (1985), The retirement-health nexus: A new measure for an old puzzle, *Journal of Human Resources*, Vol. 20, No. 3, pp. 315 – 330.
- Arvey, R.D. and Warren, N.C. (1976), Motivation and obsolescence in engineers. *Industrial Gerontology*, Vol. 3, pp. 113 – 120.
- Atkinson, J.W. (1964), Introduction to motivation, Van Nostrand, Princeton, NJ.
- Avolio, B. J., Barrett, G. V, and Sterns, H. L. (1984), Alternatives to age for assessing occupational performance capacity, *Experimental Aging Research*, Vol. 70, pp. 101-105.

- Avolio, B.J., Waldman, D.A. and McDaniel, M.A. (1990), Age and work performance in non-managerial jobs: The effects of experience and occupational type, *Academy of Management Journal*, Vol. 33, pp. 407 – 422.
- Bandura, A. (1977), Self-efficacy: Toward a unifying theory of behavioral change, *Psychological Review*, Vol. 84, pp. 191 – 215.
- Beer, M., Spector, B., Lawrence, P.R., Mills, D.Q. and Walton, R.E. (1984), *Managing Human Assets*, The Free Press, New York.
- Bourne, B. (1982), Effects of aging on work satisfaction, performance and motivation, *Aging and work*, Vol. 5 No. 1, pp. 37 - 47.
- Caprara, G.V., Caprara, M., and Steca, P. (2003), Personality's correlates of adult development and aging, *European Psychologist*, Vol. 8 No. 3, pp. 131 – 147.
- Carmichael, H. L. (1983), The agents-agents problem: Payment by relative output, *Journal of Labor Economics*, Vol. 1 No. 1, pp. 50 – 65.
- Carstensen, L. L. (1995), Evidence for a life-span theory of socioemotional selectivity, *Current Directions in Psychological Science*, Vol. 4, No. 5, pp. 151 – 156.
- Chiu, W.C.K., Chan, A.W., Snape, E., and Redman, T. (2001), Age stereotypes and discriminatory attitudes towards older workers: An East-West comparison, *Human Relations*, Vol. 54 No. 5, pp. 629 – 661.
- Cleveland, J.N. and McFarlane Shore, L. (1992), Self- and supervisory perspectives on age and work attitudes and performance, *Journal of Applied Psychology*, Vol. 77 No. 4, pp. 469 – 484.
- Cohn, R.M. (1979), Age and the satisfactions from work, *Journal of Gerontology*, Vol. 34, pp. 264 – 272.
- Committee for Economic Development (1999), *New opportunities for older workers*, Committee for Economic Development

- Cook, J., and Wall, T. (1980), New work attitude measures of trust, organizational commitment and personal need non-fulfilment, *Journal of Occupational Psychology*, Vol. 53, pp. 39 – 52.
- Cooper, C.L. and Robertson, I.T. (1991), *International review of industrial and organizational psychology*, Vol. 6, Wiley & Sons, Chichester.
- Cron, W.L., and Slocum, J.W. jr. (1986), The influence of career stages on salespeople's job attitudes, work perceptions, and performance, *Journal of Marketing Research*, Vol. 23, pp. 119 – 129.
- Demo, D. (1992), The self-concept over time: Research issues and directions, *Annual Review of Sociology*, Vol. 18, pp. 303 – 326.
- Eerde, W. van, and Thierry, H (1996), Vroom's Expectancy Models and Work-related Criteria: A Meta-Analysis, *Journal of Applied Psychology*, Vol. 81 No. 5, pp. 575 – 586.
- Ekerdt, D. J., and DeViney, S. (1993), Evidence for a preretirement process among older male workers, *Journal of Gerontology: Social Sciences*, Vol. 48, pp. 35 – 43.
- Farr, J. L., Tesluk, P. E., and Klein, S. R. (1998), Organizational structure of the workplace and the older worker, In K. W. Schaie and C. Schooler (Eds.), *Impact of work on older adults*, Springer, New York, pp. 143-185.
- Finkelstein, L. M., Burke, M. J., and Raju, N. S. (1995), Age discrimination in simulated employment contexts: An integrative analysis, *Journal of Applied Psychology*, Vol. 80, 552 – 663.
- Fossum, J.A., Arvey, R.D., Paradise, C.A., and Robbins, N.E. (1986), Modeling the skills obsolescence process: A psychological/economic integration, *The academy of management review*, Vol. 11 No. 2, pp. 362 – 374.
- Gecas, V. (1982), The self concept, *Annual review of Sociology*, Vol. 8, pp. 1 – 33.

- Gist, M, Rosen, B., and Schwoerer, C. (1988), The influence of training method and trainee age on the acquisition of computer skills, *Personnel Psychology*, Vol. 41, pp. 255 – 265.
- Greller, M.M. and Simpson, P. (1999), In search of late career: a review of contemporary social science research applicable to the understanding of late career, *Human Resource Management Review*, Vol. 9 No. 3, pp. 307 - 347.
- Gruenfeld, L.W. (1962), A study of the motivation of industrial supervisors, *Personnel Psychology*, Vol. 15, pp. 303 – 315.
- Hall, D.T. and Mansfeld, R. (1975), Relationships of age and seniority with career variables of engineers and scientists, *Journal of Applied Psychology*, Vol. 60, pp. 201 – 210.
- Hall, D. T., and Nougaim, K. (1968), An examination of Maslow’s need hierarchy in an organizational setting, *Organizational Behavior and Human Performance*, Vol. 3, pp. 12 – 35.
- Hansson, R.O., DeKoekkoek, P.D., Neede, W.M., and Patterson, D.W. (1997), Successful aging at work: annual review, 1992 – 1996: the older worker and transitions to retirement, *Journal of vocational behaviour*, Vol. 51, pp. 202 – 233.
- Hayward, M.D., Grady, W.R., Hardy, M.A., and Sommers, D. (1989), Occupational influences on retirement, disability, and death, *Demography*, Vol. 26, pp. 393 – 409.
- Heneman, H.G. (1973), The relationship between age and motivation to perform on the job, *Industrial Gerontology*, Vol. 16, pp. 30 – 36.
- Henkens, K., and Tazelaar, F. (1997), Explaining retirement decisions of civil servants in the Netherlands: Intentions, behavior and the discrepancy between the two, *Research on Aging*, Vol. 19, pp. 139 – 173.

- Higgs, P., Mein, G., Ferrie, J., Hyde, M. and Nazroo, J. (2003), Pathways to early retirement: structure and agency in decision-making among British civil servants, *Ageing & Society*, Vol. 23, pp. 761 – 778.
- Holahan, C.K. (1988), Relation of life goals at age 70 to activity participation and health and psychological well-being among Terman’s gifted men and women, *Psychology and Aging*, Vol. 3, pp. 286 – 291.
- Huddleston, P., Good, L., and Frazier, B. (2002), The influence of firm characteristics and demographic variables on Russian retail workers’ work motivation and job attitudes, *International Review of Retail, Distribution and Consumer Research*, Vol. 12 No. 4, pp. 395 – 421.
- Hurd, M. D. (1996), The effect of labor market rigidities on the labor force behavior of older workers, In D. A. Wise (Ed.), *Advances in the economics of aging*, University of Chicago Press, Chicago, pp. 11 – 58.
- Hutchens, R.M. (1989), Seniority, wages and productivity: a turbulent decade, *The Journal of Economic Perspectives*, Vol. 3 No. 4, pp. 49 – 65.
- Hwalek, M., Firestone, I., and Hoffman, W. (1982), The role social pressure plays in early retirement propensities, *Aging and Work*, Vol. 5, pp. 157 – 169.
- Jansen, P.G.W. (2002), *Organisatie en mensen: inleiding in de bedrijfspsychologie voor economen en bedrijfskundigen* (Organization and people: introduction in business psychology for economists and business economists), Nelissen, Soest.
- Kalleberg, A. L., and Loscocco, K. A. (1983), Aging, values, and rewards: Explaining age differences in job satisfaction, *American Sociological Review*, Vol. 48, pp. 78 – 90.
- Kanfer, R. and Ackerman, P.L. (2004), Aging, adult development and work motivation, *Academy of Management Review*, Vol. 29 No. 3, 440 – 458.

- Kanter, R.M. (1977), *Men and women of the corporation*, Basic Books, New York.
- Kidd, J.M. and Green, F. (2006), The careers of research scientist. Predictors of three dimensions of career commitment and intention to leave science, *Personnel review*, Vol. 35 No 3, pp. 229 – 251.
- Korman, A.K. (1970), Toward a hypothesis of work behaviour, *Journal of Applied Psychology*, Vol. 54, pp. 31 – 41.
- Kuvaas, B. (2006), Work performance, affective commitment, and work motivation: the roles of pay administration and pay level, *Journal of Organizational Behaviour*, Vol. 27, pp. 365 – 385.
- Landy, F.J., and Becker, W.S. (1987), Motivation theory reconsidered, *Research in Organizational Behavior*, Vol. 9, pp. 1 – 38.
- Lang, F.R. and Carstensen, L.L. (2002), Time counts: future time perspective, goals, and social relationships, *Psychology & Aging*, Vol. 17 No. 1, pp. 125 – 140.
- Lange, A.H., de, Taris, T.W., Jansen, P.G.W., Smulders, P., Houtman, I.L.D., and Kompier, M.A.J. (2006), Age as a factor in the relation between work and mental health: results from the longitudinal TAS study, In: J. Houdmont, and S. McIntyre (Eds.). *Occupational Health Psychology: European Perspectives on Research, Education and Practice* (Vol. 1), ISMAI Publications, Maia, Portugal, pp. 21 – 45.
- Latham, G. P., and Steele, T. P. (1983), The motivational effects of participation versus goal setting on performance, *Academy of Management Journal*, Vol. 26, pp. 406–417.
- Lawrence, B. S. (1988), New wrinkles on the theory of age: Demography, norms, and performance ratings, *Academy of Management Journal*, Vol. 31, pp. 309 – 337.
- Lazear, E. P., and Rosen, S. (1981), Rank-order tournaments as optimum labor contracts, *Journal of Political Economy*, Vol. 89 No. 5, pp. 841 – 864.

- Lazear, E.P. (1998), *Personnel economics for managers*, John Wiley & Sons Inc, New York.
- Leonard, N.H., Beauvais, L.L. and Scholl, R.W. (1999), Work motivation: the incorporation of self-concept-based processes, *Human relations*, Vol. 52 No. 8, pp. 969 – 998.
- Leviatan, U. (1992), Determinants of work motivation and work satisfaction among kibbutz aged workers, *Canadian Journal of Community Mental Health*, Vol.11, pp. 49 – 64.
- Levinson, D.J. (1986), A conception of adult development, *American Psychologist*, Vol. 41 No. 1, pp. 3 – 13.
- Linz, S.J. (2004), Motivating Russian workers: analysis of gender and age differences, *Journal of Socio-Economics*, Vol. 33, pp. 261 - 289
- Locke, E.A. and Latham, G.P. (2002), Building a practically useful theory of goal setting and task motivation. A 35-year odyssey, *American Psychologist*, Vol. 57 No. 9, pp. 705 – 717.
- Lokhorst, B. (2003), *Naar een duurzame inzet van alle leeftijden. Aanbevelingen voor CAO-partijen*, (Towards a sustainable use of all ages. Recommendations for unions), Expertisecentrum leeftijd en maatschappij, Utrecht.
- London, M. (1990), Enhancing career motivation in late career, *Journal of Organization Change Management*, Vol. 3 No. 2, pp. 58 – 71.
- Lord, R.L. (2002), Traditional motivation theories and older engineers, *Engineering Management Journal*, Vol. 14 No. 3, pp. 3 – 7.
- Lord, R.L. (2004), *Empirical evaluation of classical behavioural theories with respect to the motivation of older knowledge workers*, Dissertation, University of Alabama.

- Lynn, S.A., Thi Cao, L., and Horn, B.C. (1996), The influence of career stage on the work attitudes of male and female accounting professionals, *Journal of Organizational Behavior*, Vol. 17 No. 2, pp. 135 – 149.
- Martin, N.H. and Strauss, A.L. (1956). Patterns of mobility within industrial organizations. *Journal of Business*, Vol. 29, No. 2, 101 – 110.
- Maurer, T.J. (2001), Career-relevant learning and development, worker age, and beliefs about self-efficacy for development, *Journal of Management*, Vol. 27, pp. 123 – 140.
- McCann, R. and Giles, H. (2002), Ageism in the workplace: A communication perspective, In T.D. Nelson (Ed.), *Ageism: Stereotyping and prejudice against older persons*, MIT Press, Cambridge, pp. 163 – 199.
- Mehrabian, A. and Blum, J.S. (1996), Temperament and personality as functions of age, *International journal of aging and human development*, Vol. 42, pp. 251 – 269.
- Montepare, J. (1996), An assessment of adults' perceptions of their psychological, physical and social ages, *Journal of Clinical Geropsychology*, Vol. 2, pp. 117 – 128.
- Montepare, J.M., and Clements, A.E. (2001), "Age schemas": Guides to processing information about the self, *Journal of Adult Development*, Vol. 8, pp. 99 – 108.
- Montepare, J.M., and Zebrowitz, L.A. (1998), Person perception comes of age: The salience and significance of age in social judgements, In M.P. Zanna (Ed.). *Advances in Experimental Social Psychology*, Vol. 20, Academic Press, New York, pp. 93 – 161.
- Morrow, P.C., and McElroy, J.C. (1987), Work commitment and job satisfaction over three career stages, *Journal of Vocational Behavior*, Vol. 30, pp. 330 – 346.
- Mount, M.K. (1984), Managerial career stage and facets of job satisfaction, *Journal of Vocational Behavior*, Vol. 24, pp. 340 – 354.

- Muijnck J.A. and Zwinkels, W.S. (2002), *Oudere werknemers in het MKB: literatuurstudie naar de inzet van oudere werknemers in de MKB-onderneming* (Older employees in SME's: a literature review on the use of older employees in the SME-organization), EIM, Onderzoek voor Bedrijf & Beleid, Zoetermeer.
- Neugarten, B. 1968, *Middle age and aging*, University of Chicago Press, Chicago.
- Noe, R.A., Noe, A.W., Bachhuber, J.A. (1990), An investigation of the correlates of career motivation, *Journal of Vocational Behavior*, Vol. 37, pp. 340 – 356.
- OECD (2005), *Ageing and Employment Policies Netherlands*, OECD.
- Okun, M.A., and Di Vesta, F.J. (1976), Cautiousness in adulthood as a function of age and instructions, *Journals of Gerontology*, Vol. 31, pp. 571 – 576.
- Ornstein, S., Cron, W.L. and Slocum, J.W. (1989), Life stage versus career stage: a comparative test of the theories of Levinson and Super, *Journal of Organizational Behavior*, Vol. 10, pp. 117 – 133.
- Panek, P.E., Staats, S., and Hiles, A. (2006), College students' perceptions of job demands, recommended retirement ages, and age of optimal performance in selected occupations, *International journal of aging and human development*, Vol. 62 No. 2, pp. 87 – 115.
- Parnes, H. S. (1988), The retirement decision, In M. E. Borus, H. S. Parnes, S. H. Sandell, and B. Seidman (Eds.), *The older worker*, WI: Industrial Relations Research Association IRRA Series, Madison, pp. 115 – 150.
- Paul, R.J. and Townsend, J.B. (1993), Managing the older worker – don't just rinse away the gray, *The Academy of Management Executive*, Vol. 7 No. 3, pp. 67 – 74.
- Paynter, J.L. (2004), *The motivational profiles of teachers: Teachers' preferences for extrinsic, intrinsic, and moral motivators*, Dissertation, The John Hopkins University.

- Phillips, J.S., Barrett, G.V., and Rush, M.C. (1978), Job structure and age satisfaction. *Aging and Work*, Vol. 1, pp. 109-119.
- Pinder, C. (1998), *Work motivation in organizational behavior*, Prentice-Hall, Upper Saddle River, NJ.
- Pratt, M. W., Norris, J. E., Arnold, M. L., and Filyer, R. (1999), Generativity and moral development as predictors of value-socialization narratives for young persons across the lifespan: From lessons learned to stories shared, *Psychology and Aging*, Vol. 14, pp. 414-426.
- Raynor, J.O. (1982), A theory of personality functioning and change, In *Motivation, Career striving and Aging*, Raynor, J.O. and Entin, E.E. (eds.), Hemisphere Publishing Corporation, Washington, pp. 249 – 302.
- Remery, C., Henkens, K., Schippers, J., Doorne-Huiskes, J., van, and Ekamper, P. (2001), *Organisaties, veroudering en management: een onderzoek onder werkgevers*, NIDI, Den Haag.
- Rhodes, S.R. (1983), Age-related differences in work attitudes and behavior: A review and conceptual analysis, *Psychological Bulletin*, Vol. 93 No. 2, pp. 328 – 367.
- Rosen, B. and Jerdee, T.H. (1976), The influence of age stereotypes on managerial decisions, *Journal of Applied Psychology*, Vol. 61, pp. 428 – 432.
- Saba, T. and Guerin, G. (2005), Extending employment beyond retirement age: the case of health care managers in Quebec, *Public Personnel Management*, Vol 34 No. 2, pp. 195 – 214.
- Saleh, B. and Otis, J. (1964), Age and level of job satisfaction, *Personnel Psychology*, Vol. 17, pp. 425 – 430.
- Schmitt, N. and McCune, J.T. (1981), The relationship between job attitudes and the decision to retire, *Academy of Management Journal*, Vol. 24, pp. 795 – 802.

- Schwab, D.P. and Heneman, H.G. (1977), Age and Satisfaction with dimensions of work, *Journal of Vocational Behavior*, Vol. 10, pp. 212 – 220.
- Sorkin, D.H., and Rook, K.S. (2006), Dealing with negative social exchanges in later life: coping responses, goals, and effectiveness, *Psychology and Aging*, Vol. 21 No. 4, pp. 715 – 725.
- Settersten, R.A., and Mayer, K.U. (1997), The measurement of age, age structuring, and the life course, *Annual Review of Sociology*, Vol. 23, pp. 233 – 261.
- Shearer, R.L., and Steger, J. (1975), Manpower obsolescence: A new definition and empirical investigation of personal variables, *Academy of management journal*, Vol. 18 No. 2, pp. 263 – 275.
- Smith, D. B., and Moen, P. (1998), Spousal influence on retirement: His, her, and their perceptions, *Journal of Marriage and the Family*, Vol. 60, No. 3, pp. 734 – 744.
- Sofer, C. (1970), *Men in mid-career: A study of British managers and technical specialists*, Cambridge University Press, Cambridge, UK.
- Srivastava, S., John, O.P., Gosling, S.D. and Potter, J. (2003), Development of personality in early and middle adulthood: set like plaster or persistent change?, *Journal of Personality and Social Psychology*, vol. 83 No. 5, pp. 1041 – 1053.
- Stagner, R. (1985), Aging in industry, In Birren, J.E. and Schaie, K.W. (Eds.), *Handbook of the psychology of aging*, Van Nostrand Reinhold Company Inc, New York, pp. 789 – 817.
- Stajkovic, A.D. (2006), Development of a core confidence-higher order construct, *Journal of Applied Psychology*, Vol. 91 No. 6, pp. 1208 – 1224.
- Sterns, H.L. and Alexander, R.A. (1987), Industrial gerontology: The aging individual and work, In Schaie, K.W. (Eds.), *Annual review of gerontology and geriatrics*, Vol. 7, Springer Publishing Company, New York, pp. 243 – 264.

- Sterns, H. L., and Doverspike, D. (1989), Aging and the retraining and learning process in organizations, In I. Goldstein & R. Katznel (Eds.), *Training and development in work organizations*, CA: Jossey-Bass, San Francisco, pp. 299 – 332.
- Sterns, H.L. and Miklos, S.M. (1995), The Aging Worker in a Changing Environment: Organizational and Individual Issues, *Journal of Vocational Behavior*, Vol. 47, pp. 248 – 268.
- Super, D.E. (1984), Career and life development, In Brown, D. and Brooks, L. (Eds), *Career choice development*. Jossey-Bass: San Francisco.
- Tamir, L.M., and Antonucci, T.C. (1981), Self-perception, motivation, and social support through the family life course, *Journal of marriage and the family*, Vol. 43 No. 1, pp. 151 – 160.
- Thunissen, M. (2005), Leeftijdsbewust personeelsbeleid, In: *Personeelsmanagement. Leerboek*, Kluytmans, F. (Eds.), Wolters-Noordhoff, Groningen, pp. 581 – 610.
- Valentine, S. and Valentine, W.R. (1998), Intrinsic and extrinsic motivators and older employees' attitudes towards their current jobs, *Perceptual and Motor Skills*, Vol. 87, pp. 407 – 410.
- Vallerand, R.J., O'Connor, B.P. and Hamel, M. (1995), Motivation in later life: theory and assessment, *International journal of aging and human development*, Vol. 41 No. 3, pp. 221 – 238.
- Veroff, J., Atkinson, J.W., Feld, S. and Gurin, G. (1960), The use of thematic apperception to assess motivation in a nationwide interview study, *Psychological Monographs*, Vo.. 74 No. 12, pp. 1142 – 1158.
- Visser, P., Henkens. K. en Schipper, J. (2003), Beeldvorming en stereotypering van oudere werknemers in organisaties (Imaging and stereotyping of older workers in organizations), *Gedrag en organisatie*, Vol. 16 No. 1, pp. 2 – 22.

- Vries, S. de, Willemsen, M. and Nauta, A. (2002), *Oud en wijs in het onderwijs: Resultaten van een kwantitatief onderzoek naar gezonde en langdurige arbeidsparticipatie van ouderen* (Old and grey in education: results of quantitative research on healthy and enduring labor participation of older people), TNO, Hoofddorp.
- Vroom, V.H. (1964), *Work and motivation*, John Wiley & Sons, New York.
- Warr, P., Cook, J., and Wall, T. (1979), Scales for the measurement of some work attitudes and aspects of psychological well-being, *Journal of Occupational Psychology*, Vol. 52, pp. 129 – 148.
- Warr, P. (1992), Age and Occupational well-being, *Psychology and Aging*, Vol. 7 No. 1, pp. 37 – 45.
- Warr, P.B. (1997), Age, work and mental health, In K.W. Schaie & WIE Schooler (Eds), *The impact of work on older adults*, Springer, New York, pp. 252 - 296.
- Warr, P. (2000), Job performance and the ageing workforce, In N. Chmiel (Ed.), *Introduction to Work and Organizational Psychology: A European Perspective*, Blackwell Publishers, pp. 407- 423.
- Warr, P. (2001), Age and work behaviour: Physical attributes, cognitive abilities, knowledge, personality traits, and motives, *International Review of Industrial and Organizational Psychology*, Vol. 16, pp. 1 – 36.
- Wegge, J. and Haslam, S.A. (2005), Improving work motivation and performance in brainstorming groups: The effects of three group goal-setting strategies, *European journal of work and organizational psychology*, Vol. 14 No. 4, pp. 400 – 430.
- Wolf, G., London, M., Casey, J., and Pufahl, J. (1995), Career experience and motivation as predictors of training behaviors and outcomes for displaced engineers, *Journal of Vocational Behavior*, Vol. 47, pp. 316 – 332.

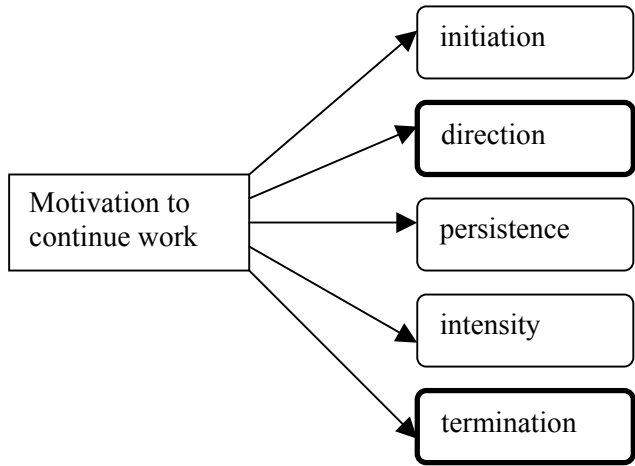


Figure 1 *'Conceptualizations of work motivation'*

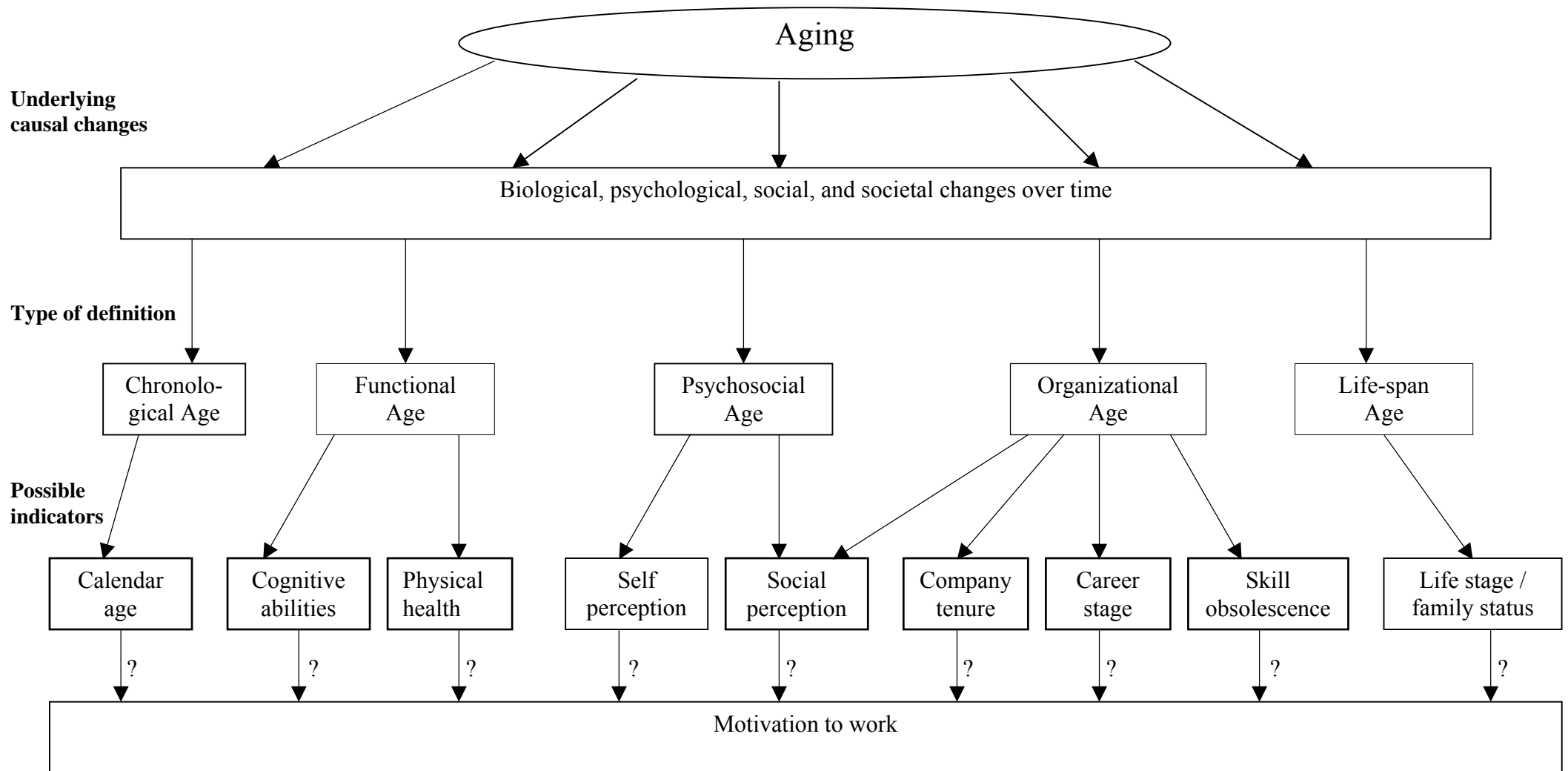


Figure 2 'Research framework' (extended version of Figure 1, De Lange et al., 2006, p. 7)

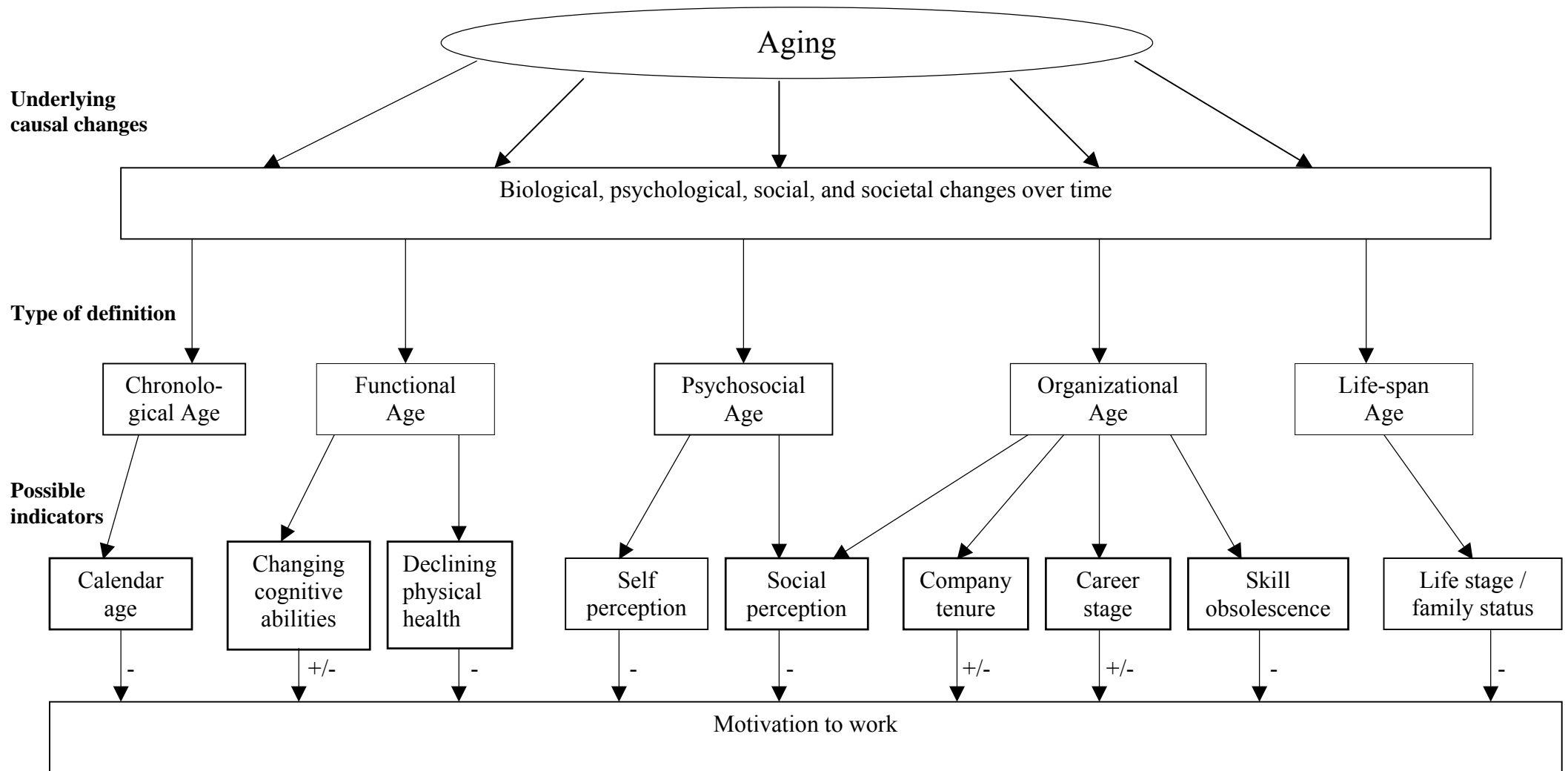


Figure 3 ‘Summary of the impact of the various age concepts on motivation to work based on literature review’

Table I 'Keywords used for literature search'

| Keywords | | | | | |
|-----------------|-----|------|-----|----------------------|-----------------------|
| Motivation | AND | Work | AND | - Age | - Older worker |
| | | | | - Older employee | - Aging |
| | | | | - Psychosocial age | - Self perception |
| | | | | - Age norms | - Functional age |
| | | | | - Health | - Biological age |
| | | | | - Psychological age | - Cognitive abilities |
| | | | | - Physical abilities | - Lifespan |
| | | | | - Life course | - Family status |
| | | | | - Marital status | - Tenure |
| | | | | - Career stage | - Obsolescence |

Table II 'Selected empirical studies'

| No. | Author | Sample | Independent variables | Dependent variables | Measurement instrument of age-related variable | Results |
|---|--------------------------------|-------------------------------|--|--|---|--|
| <i>Studies examining direction of motivation to continue work</i> | | | | | | |
| 1 | Adler and Aranya (1984) | Professional accountants | Career stage | Work needs (security, social, esteem, autonomy, and self-actualization), work attitudes and vocational preferences | <i>Organizational age</i> with career stage as indicator operationalized as age | Needs, work attitudes, and occupation match differ significantly with career stage |
| 2 | Cook and Wall (1980) | Male blue-collar workers | Organizational tenure | Intrinsic motivation | <i>Organizational age</i> with self-rated organizational tenure as indicator | Positive correlation between organizational tenure and intrinsic motivation |
| 3 | Cron and Slocum (1986) | Salespeople | Career stage | Job attitudes (psychological needs), satisfaction, performance, work environment perceptions | <i>Organizational age</i> : Career Concerns Inventory (CCI) (Super, Zerkowitz, & Thompson, 1981), $\alpha = .83-.90$ | Attitudes, satisfaction, performance and work environment perception differ significantly with career stage |
| 4 | Holahan (1988) | Older people (65 – 75) | Life goals (autonomy, involvement and achievement motivation) | Activities, health and well-being | <i>Functional age</i> with self-rated health (2 items) as indicator | Achievement motivation and health are positively correlated |
| 5 | Kidd and Green (2006) | Biomedical research scientist | Demographic (family responsibilities) and work related factors | Career motivation and intention to leave | <i>Life span age</i> : Self-rated family status (partner and/or dependent children) | The factors explaining career motivation and intention to remain in the profession were similar for those with various types of family responsibilities |
| 6 | Kuvaas (2006) | Norwegian bank employees | Organizational tenure | Intrinsic motivation | <i>Organizational age</i> : self-rated organizational tenure | Positive correlation between organizational tenure and intrinsic motivation |
| 7 | Lang and Carstensen (2002) | Germans | Future time perspective | Social motivation | <i>Psychosocial age</i> : self perception operationalized as self-rated future time perspective (e.g. 'most of my life (still) lies ahead of me') (Carstensen & Lang, 1996), $\alpha = .92$ | Limited future time perspective positively related to preference for emotionally meaningful goals such as generativity |
| 8 | Lynn, Thi Cao, and Horn (1996) | Accountants | Career stage | Work commitment, intrinsic and extrinsic rewards satisfaction and turnover intention | <i>Organizational age</i> : career stage operationalized as professional tenure | Among male accountants, job involvement, organizational commitment, intrinsic and extrinsic rewards satisfaction are positively related to career stage and turnover intention is negatively related to career stage |
| 9 | Morrow and McElroy (1987) | Public agency employees | Career stage | Work commitment (value on work), work ethic endorsement, intention to remain and job satisfaction | <i>Organizational age</i> : career stage operationalized as age, organizational tenure and positional tenure | Career stage was positively related to job involvement, commitment, work ethic endorsement, and intention to remain. |

Table III 'Selected conceptual studies'

| No. | Author | Independent variables | Dependent variables | Theories or method | Results / ideas |
|---|--|---|---|--|---|
| <i>Studies examining direction of motivation to continue work</i> | | | | | |
| 1 | Bandura (1977) | <i>Psychosocial age</i> : self efficacy | Motivation (initiation, effort and persistence) | Motivation theory | Self efficacy determines motivation |
| 2 | Carstensen (1995) | <i>Psychosocial age</i> | Social motivation | Theories about age-related change in social behavior (based on empirical research) | Motivation for contact changes with age because a decline in available future time changes preferences. |
| 3 | Kanfer and Ackerman (2004) | <i>Functional and psychosocial age</i> : age-related changes in adult development, such as cognitive abilities and self concept | Work motivation | Life span theories, research on cognitive abilities, personality, affect, vocational interests, values, and self-concept, Kanfer's expectancy theory | There is theoretical nor empirical evidence that work motivation declines with age |
| 4 | Korman (1970) | <i>Psychosocial age</i> : self-concept | Work motivation (to perform) and choice of activities (direction) | Hypothesis of work behavior | Self-perceived competence for a task facilitates the choice of a task and performance for that task |
| 5 | Lazear (1998) | <i>Organizational age</i> : steep earning profiles | Incentives to work | Labor economics | Steep earning profiles provide positive incentives |
| 6 | London (1990) | <i>Organizational age</i> : career identity, career insight and career resilience | Career motivation | | Career motivation consists of career identity, career insight and career resilience |
| 7 | Rosen and Jerdee (1976) | <i>Psychosocial age</i> : age stereotypes | Managerial decisions | In basket-exercise with business students | Stereotypes lead to discrimination, which has a potential negative impact on older worker work motivation |
| <i>Studies examining termination of motivation to continue work</i> | | | | | |
| 8 | Hanson, De Koekkoek, Neece, and Patterson (1997) | <i>Organizational age</i> | Retirement decision | Literature review (1992 – 1996) | The perception of career attainment influences job attachment, which in turn influences the retirement decision |
| 9 | Hurd (1996) | <i>Life span age</i> | Retirement decision | Literature review to support retirement model | Tastes for work gradually shift with age towards leisure |