

The Role of Age and Occupational Future Time Perspective in Workers' Motivation to Learn

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Abstract The purpose of this paper is to better understand the relationship between employees' chronological age and their motivation to learn, by adopting a lifespan perspective. Based on socioemotional selectivity theory, we suggest that occupational future time perspective mediates the relationship between age and motivation to learn. In accordance with expectancy-value and self-efficacy theories, motivation to learn was operationalized as employees' learning motivational beliefs (i.e., learning self-efficacy and learning value). To test our model, survey data were obtained from 560 workers between the ages of 21 to 64 years. Results demonstrated the importance of taking workers' occupational future time perspective into account to explain relationships between age and learning motivational beliefs.

Keywords Chronological age · Older workers · Future time perspective · Motivation to learn · Learning motivational beliefs · Socioemotional selectivity theory

Introduction

Older workers are playing an increasingly crucial role in the labor market. Policy makers have raised the legal retirement age but, at the same time, the rate of unemployment of workers aged 50 years and older remains low (OECD 2014). To foster older workers' chances to stay in the labor market, there is a need to focus on their

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learning and professional development (Raemdonck 2006). The knowledge economy emphasizes the importance of learning and development activities (Edwards 1997). Workers' professional development is also important for organizational effectiveness and performance (Ellinger et al. 2002). Moreover, research shows that workers' with high motivation combined with high work ability are most motivated to continue to work beyond retirement age (Brusch and Büsch 2013).

However, employers still hold negative stereotypes about older workers (Maurer et al. 2003). One of the most persistent negative stereotypes is related to older workers' lack of willingness to participate in training and career development activities (Ng and Feldman 2012). Related literature on older workers' learning shows indeed that older workers participate less in learning and development activities compared to their younger colleagues (Colquitt et al. 2000; Van der Heijden et al. 2009). Researchers have attempted to gain a better understanding of why some workers participate in learning and development activities and what factors influence their participation. For instance, a study showed that workers' participation in learning activities is sustained by their motivation to learn, which is one of the most important predictors of involvement in professional development (Noe and Wilk 1993).

In the present article, we focus on older workers' motivation to learn. We base our research on expectancy-value theory (Eccles and Wigfield 2002; Wigfield and Eccles 2000) and self-efficacy theory (Bandura 1977, 1993). Motivation to learn is conceptualized in the present article as learning motivational beliefs: learning self-efficacy and learning value. Literature shows a negative relationship between chronological age and self-efficacy related to development (Maurer 2001; Maurer et al. 2003). Age might also impact the value workers attribute to learning activities given that individuals tend to focus less on growth goals as they age (Carstensen et al. 1999). Socioemotional selectivity theory (SST) proposes a shift of personal priorities from growth goals to emotional stability goals and that this shift is due to the changes in individuals' perceptions of their future, their future time perspective (Carstensen 1995, 2006). As individuals get older, they perceive their remaining time as shorter and they also perceive fewer opportunities in their future. These changes impact the priority given to different goals workers pursue. Applied to our context, older workers might value learning activities less compared to their younger colleagues because their occupational future time perspective is more restrained.

In summary, the objectives of this study are to empirically test (1) whether employees' age is related to their learning motivational beliefs and (2) whether occupational future time perspective explains these relationships. Before stating the specific hypotheses of this study, we first define relevant concepts and present available research on the relationship between age, occupational future time perspective, and learning motivational beliefs.

Theory and Hypotheses

Because many different motivational theories exist, *motivation to learn* has been defined in various ways. Kleinginna and Kleinginna (1981) for instance reported more than a hundred different definitions of motivation used in the literature. Generally, authors agree that motivation is a complex process composed of internal and

external forces that trigger and direct a given behavior, and also lead individuals to invest effort and make them persist in this behavior in order to reach their goals (e.g., Bandura 2000; Beier and Kanfer 2010; Brophy 2014; Schunk and Miller 2002; Schunk and Usher 2012).

As a complex process, motivation to learn is a challenging concept not only to define but also to capture. In organizational psychology, researchers (see LePine et al. 2004, for an example) usually conceive job-related motivation to learn as a unidimensional construct (e.g., Noe and Schmitt 1986). Based on expectancy-value (Eccles and Wigfield 2002) and self-efficacy theories (Bandura 2000), this article overcomes the aforementioned issue by operationalizing motivation to learn through learning motivational beliefs. Applied to our context, motivational beliefs refer to the opinions, judgements, and values that employees hold about job-related learning situations (Boekaerts 1996). By measuring motivation to learn through learning self-efficacy and learning value, we aim to present a more fine-grained construct of motivation to learn compared to a unidimensional one, which is usually applied in organizational research. Moreover, learning self-efficacy and learning value are malleable characteristics rather than on personality-related constructs, which allows concrete interventions. This is the reason expectancy-value and self-efficacy theories were chosen from a range of other motivational theories. Both motivational beliefs are explained in further detail in the following paragraphs.

Learning Self-Efficacy Self-efficacy has been first defined as a specific type of expectancy regarding one's beliefs about the ability to perform a given behavior (Bandura 1977). This definition has been expanded and applied to different contexts to capture personal judgments of one's capabilities to organize and execute courses of action to attain designated goals (Bandura 1982; Bandura 2000). Self-efficacy has been conceptually distinguished from other concepts such as self-concept, self-esteem, or outcome expectancies and possesses incremental validity in predicting learning and achievement related outcomes (Zimmerman 2000).

Self-concept is a global construct comprising self-efficacy and other aspects of the self (Schunk 1991). While self-concept refers to one's general perceptions of the self in a given domain, self-efficacy represents individuals' beliefs about what they can accomplish in a given situation (Bong and Skaalvik 2003). Self-esteem refers to an affective evaluation of the self, whereas self-efficacy is a judgment about task capability (Gist 1987; Gist and Mitchell 1992). For instance, a manager may have low confidence in his or her capacities of leading a team whilst having overall positive feelings about him- or herself. Although the links between self-efficacy and outcome expectancy remain ambiguous (Williams 2010), both concepts differ theoretically in that outcome expectancy concerns the estimated probability in succeeding a task, by weighing expected consequences in terms of gain and losses (Eccles and Wigfield 2002), whereas self-efficacy is related to beliefs about the capability to realize a task (Bandura 1977).

A problem that arises is that outcome expectancies as conceptualized in expectancy-value theory overlap with the concept of self-efficacy in empirical studies (Maddux 1995). Moreover, a number of studies suggest that self-efficacy has better predictive value than outcome expectancies (Maddux, 1995). Consequently, only learning self-efficacy has been included in the present study. It has also been suggested that self-

efficacy has better predictive validity for learning outcomes than self-concept (Pajares and Miller 1994), impacting learning outcomes differently than perceived control (McCaul et al. 1993) and outcome expectancies (Williams 2010).

Self-efficacy has been found to lead to higher self-set goals (Phillips and Gully 1997) and to higher performance attainments (Bandura 1992; Phillips and Gully 1997) and to play an important role in influencing individuals' behavior (Bandura 1995; Igarria and Livari 1995; Zimmerman 2000). Self-efficacy beliefs influence individuals' choice of activities, as well as the amount of effort undertaken to pursue and to persist in a task (Bandura 1977, 2001). People with high self-efficacy are more likely to perform related behavior than those with a low self-efficacy. As self-efficacy is domain-specific, the present article focuses on learning self-efficacy, which is defined as workers' beliefs in their own capabilities to succeed in a given task related to learning.

A number of studies in school settings showed that academic self-efficacy sustains motivation by positively impacting skill development (Schunk 1991; Tannenbaum et al. 1991). Higher learning self-efficacy has been found to be related to a higher number of challenging goals, development of useful strategies, persistence, and better performance (Bandura 1977; Carver and Scheier 2000; Locke and Latham 2002; Pintrich 2000; Thomas and Mathieu 1994; Vancouver and Kendall 2006).

In organizational settings it was found that employees with stronger beliefs about their capacity to learn and develop are more likely to be interested in (Maurer and Tarulli 1994) and to take part in development activities (Maurer et al. 2003), have a higher pre-training motivation (Noe and Wilk 1993) and have stronger intentions to participate in training programs (Maurer et al. 2002; Sadri and Robertson 1993). Employees who believe that they are capable of improving and developing their job-related skills, report more participation in development activities in the past (Maurer and Tarulli 1994; Noe and Wilk 1993) and also are more interested in participating in development activities in the future (Maurer and Palmer 1999; Maurer and Tarulli 1994).

Learning Value Expectancy-value theory (Eccles 1983) aimed originally to explain gender differences in mathematics engagement. Authors used this model to explain how expectancies and values were directly and indirectly influencing academic choices, deployed effort, and persistence of children. Value represents the “quality of the task that contributes to the increasing or decreasing probability that an individual will select it” (Eccles 2005, p. 109). The more a task is perceived as valuable, the more the motivational outcomes are important (Shechter et al. 2011). Value consists of four components (Wigfield 1994): interest, utility, importance, and relative costs of a given task or activity. Interest or intrinsic value refers to the enjoyment one can gain from realizing a task or an activity. Utility dimension corresponds to the extent to which an activity is useful for the attainment of future goals. Importance or attainment value refers to the importance of engaging in an activity for personal identity. Finally, relative costs refer to the perceived amount of effort and time needed to accomplish a given activity compared to another one. In the present article, we only take into account the dimension of importance. Consequently, when we refer to learning value, we actually refer to the importance that workers attribute to learning and development activities at work.

Learning value can be approached from a general perspective, such as general values that individuals hold, or with regard to values related to a specific life domain, such as work (Roe and Ester 1999). Value can also be considered to an even more specific degree when related to different activities or goals that are pursued within a particular life domain. Indeed, in the work-related domain, people pursue different goals such as looking for another career position, having good relationships at work, or taking part in training. These work goals can be extrinsic or intrinsic and are considered to be indicators of higher-order work values which reflect employees' general preferences toward their work (Vansteenkiste et al. 2007). As employees pursue different goals at work, it is interesting to focus on the relative value of learning and development goals.

The relativity already expressed in the "relative costs" dimension as originally conceptualized by Eccles (1983) was applied in the present article to assessing the importance of learning and development activities. According to Eccles (1983), people have many different goals and therefore they need to prioritize their activities. This has an impact on the value they attach to different activities (Eccles 2005). The concept of cost is expressed in terms of the loss of resources (time and energy) for other activities. Employees have a variety of different activities that they can value and find important. However, some activities might be perceived as more important than others. In other words, the learning value refers in the present article to the importance employees attribute to learning and development activities relatively to other work-related goals or activities.

In sum, it has been shown that motivational beliefs such as self-efficacy and value given to an activity predict the decision to undertake this activity (Bandura 2000, 2001; Eccles and Wigfield 2002; Wigfield et al. 2006). Learning value is considered to be an important component of motivation (Wigfield and Eccles 2000) that, beside learning self-efficacy, will determine the engagement of employees in learning and development activities. Engaging in learning and development activities might have positive value for workers, because it may help them adapting to changes in their job or to get a promotion. A greater value attached to job-related learning and professional development activities, comparing to other activities, might enhance workers' chances to engage in learning and development activities.

Age and Learning Motivational Beliefs

Literature proposes a negative relationship between workers' age and their motivation to learn, based on the argument that older workers focus less on professional development than their younger colleagues because of the changes in motivational structures across the life span (Kanfer and Ackerman 2004). Indeed it is assumed that individuals change their goals across life stages (Kanfer and Ackerman 2004). While young people primarily strive for gains (i.e. skill acquisition), older people more often focus on maintenance and the prevention of losses (Ebner et al. 2006; Freund 2006). It has also been shown that older workers have a lower level of learning self-efficacy compared to their younger colleagues (Maurer 2001). Following this, we state that

Hypothesis 1_a Age is negatively related to learning self-efficacy.

Hypothesis 1_b Age is negatively related to learning value.

Age, Future Time Perspective, and Motivational Beliefs

There are various definitions of an “older worker” in the literature, depending on the research domain, with age cut-offs ranging from 45 to 75 years (Kooij et al. 2008). In the present study, for descriptive reasons, we define older workers as workers aged 50 years and older. However, we adopt a lifespan approach to aging, which emphasizes that individual development is continuous and extends across the entire life course (Baltes et al. 1999), and therefore we operationalized age as a continuous variable.

A number of authors highlight the need to identify other underlying variables that account for relationships between age and learning outcomes (Warr and Birdi 1998). For example, Birdi et al. (1997) found a negative relationship between age and participation in professional development activities, but also showed that this link was explained by other variables, such as motivation to learn and confidence in learning. In other words, these explained workers’ participation in professional development activities better than their age. Similarly, Maurer et al. (2003) suggested that researchers cannot make conclusions about causal effects of age but need to assess age-related mediating variables that predict outcome variables.

Raemdonck et al. (2015) suggest that it is not age as such which is responsible for a possible decline in motivation to learn and develop. Variables which are often associated with increased age, such as future time perspective, might be better predictors of importance of learning and development goals. Therefore, we adopt socioemotional selectivity theory (SST), a lifespan theory of motivation, to suggest an explanation for the relationship between age and motivation to learn. Next, we discuss the concept of occupational future time perspective, which might explain the relationship between age and employees’ motivation to learn in a work context.

Occupational future time perspective refers to employees’ perceptions of their occupational future in terms of time left in the workplace, but also to perceived opportunities and constraints in their professional future (Cate and John 2007; Zacher and Frese 2009). Depending on the theoretical framework, one might consider future time perspective (FTP) as a stable dispositional trait, as a flexible cognitive structure, or as a motivational variable (Dubeau et al. 2015; Nuttin and Lens 2014; Seijts 1998). Our conceptualization of FTP is rooted in the perspective of SST, which defines the construct as workers’ malleable perceptions and beliefs. More specifically, we use Zacher and Frese’s (2009) concept of occupational FTP which is based on conceptualizations of general FTP in SST.

Zacher and Frese (2009) distinguished two dimensions of occupational future time perspective: focus on opportunities and perceived remaining time. Workers might focus on opportunities and possibilities or they might focus on limitations, restrictions and constraints that the workplace presents to them. Workers might also have a narrow or an open-ended perception of their remaining time at work. FTP is an age-related variable: people tend to perceive their future as more constrained with age (Ebner et al. 2006). Several empirical studies have demonstrated that increased age is positively related to a narrow FTP. More precisely,

Hypothesis 2_a Age is negatively related to focus on opportunities.

Hypothesis 2_b Age is positively related to constrained perceived remaining time.

FTP is related to individuals' cognitive ability to plan and organize future activities. As it is also closely related to goal achievement, future time perspective can be considered a motivational variable (Nuttin and Lens 2014; Nuttin and Willy 1985). Workers with a high focus on opportunities think positively about their professional future and perceive a number of new goals, options, and possibilities in their personal future at work (Zacher and Frese 2009, 2011). Perceived remaining time has been recently linked to learning goal orientation as well as to attitude toward learning and development (Kooij and Zacher 2016). Also, people who perceive their future positively tend to commit more to self-improvement goals (Oettingen et al. 2005) and tend to have higher expectations toward success (Oettingen and Mayer 2002). Consequently, workers focusing on opportunities might feel more self-confident about job-related learning activities and attribute greater importance to them.

Hypothesis 3_a Focus on opportunities is positively related to learning self-efficacy.
Hypothesis 3_b Focus on opportunities is positively related to learning value.

SST further suggests that preferences, selection of activities, goals, and goal pursuit are linked to the perception of time (Carstensen 2006; Lang and Carstensen 2002). When time is perceived as open-ended, long-term goals and goals that optimize the future, such as knowledge acquisition, are prioritized. In contrast, when time is perceived as limited, goals linked to short-term benefits are prioritized. Consequently, workers who perceive their remaining time at work as constrained might feel less confident about mastering new job-related skills than those who perceive their remaining time as open-ended. And as they subscribe to a more long-term perspective, workers with an open-ended perceived remaining time would attach greater importance to learning activities. In contrast, those who perceive their professional future as constrained might value learning activities less.

Hypothesis 3_c Constrained perceived remaining time is negatively related to learning self-efficacy.
Hypothesis 3_d Constrained perceived remaining time is negatively related to learning value.

Finally, it has been suggested that differences in preferences between young and older adults are due to differences in their future time perception rather than their age (Baltes and Carstensen 1996; Carstensen 2006; Charles and Carstensen 2009; Fung and Carstensen 2004; Löckenhoff and Carstensen 2004). Consequently, young adults might focus more on optimizing their future, whereas older adults shift their focus on emotional regulation. The present article suggests that the relationship between age and motivation to learn can be explained by the way workers perceive their professional future. In other words, we suggest that

Hypothesis 4 Occupational FTP (focus on opportunities and constrained perceived remaining time) mediates the negative relationships between age and learning motivational beliefs (learning self-efficacy and learning value).

To summarize, the hypothesized links are presented in Fig. 1.

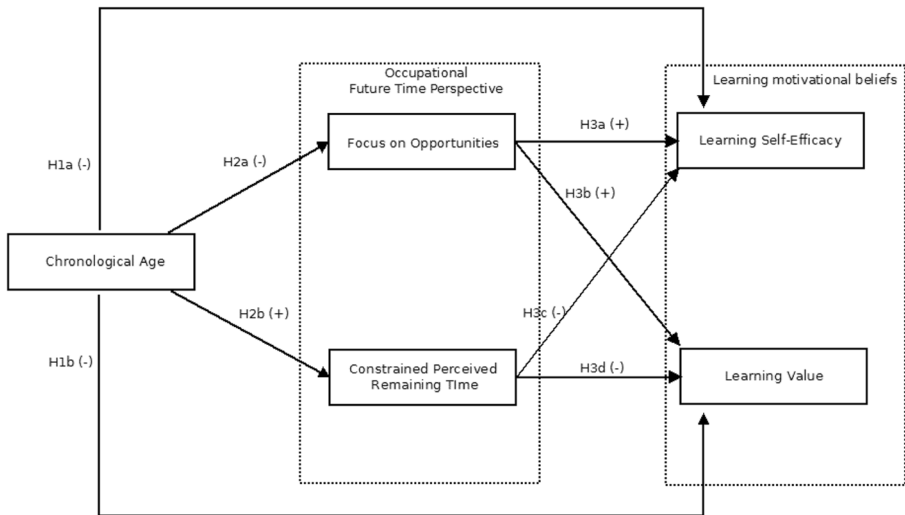


Fig. 1 Theoretical model of workers' learning motivational beliefs with corresponding hypotheses

Method

Participants and Procedure

Data were collected via a web-based survey and by using social networking websites such as LinkedIn. The following criteria for participating in the study were defined: participants had to (1) be employed in a public or private company, (2) work in Belgium; and (3) be French native speakers.

The final sample consisted of 560 respondents after deleting data of two participants with missing value on the main study variables. About half of the respondents were female (42 %), mostly Belgian (95.2 %) with a permanent working contract (82.9 %), from public (52.6 %) and private sector, with an average company tenure of 8.7 years ($SD = 9.5$) and an average age of 40.2 ($SD = 12.6$; range = 21–64). For descriptive purposes and based on the categorization suggested by De Lange et al. (2009), the age variable was categorized into three age groups: young (≤ 30), middle-aged (31–44) and older workers (≥ 50). In our sample, 33.6 % were young workers, 27 % were middle-aged workers and 39.5 % were older workers. Seventy-seven percent had a degree in higher education (bachelor degree at least).

Measures

All continuous variables except age were measured with a 5-point Likert scale (from 1 = “completely disagree” to 5 = “completely agree”).

Chronological Age Participants were asked to indicate their year of birth. Age was considered as a continuous variable for the main analysis but descriptive information is provided for three age groups: young (≤ 30), middle-aged (31–49) and mature workers (≥ 50).

Occupational Future Time Perspective (OFTP) Based on previous research on OFTP (Zacher 2013; Zacher and Frese 2009), an eight-item scale was used to measure two dimensions of OFTP: focus on opportunities (5 items; “*Many opportunities await me in my occupational future,*” $\alpha = .91$) and perceived remaining time (3 items; “*Most of my occupational life lies ahead of me,*” $\alpha = .90$). Scores for perceived remaining time were reversed to form the variable called constrained perceived remaining time. In order to test the distinction of these two dimensions, results from two confirmatory factor analyses were compared (see Fig. 2). In the first model, the items were specified to load on one single factor. In the second model, eight items were specified to load on two separate factors which were allowed to covary. The first model with a single dimension did not fit our data well ($\chi^2(20) = 823.7, p < .000$; NNFI = .66; NFI = .75; CFI = .76; GFI = .71; AGFI = .49; RMSEA = .27). The second model had a better fit ($\chi^2(19) = 86.51, p < .000$; NNFI = .97; NFI = .97; CFI = .98; GFI = .96; AGFI = .93; RMSEA = .08). Two dimensions, called focus on opportunities (5 items; $\alpha = .91$) and constrained perceived remaining time (3 items; $\alpha = .90$), were positively correlated ($r = -.52$). A comparison of the models showed that the second model fits the data significantly better ($\Delta\chi^2[1] = 737.24, p < .000$).

Learning Motivational Beliefs Learning motivational beliefs were operationalized as learning self-efficacy and learning value. A unidimensional six-item scale (Armstrong-Stassen 2008) was adapted for measuring workers’ learning self-efficacy (e.g., “*I am confident in my ability to learn complex skills,*” $\alpha = .88$). “*I am*

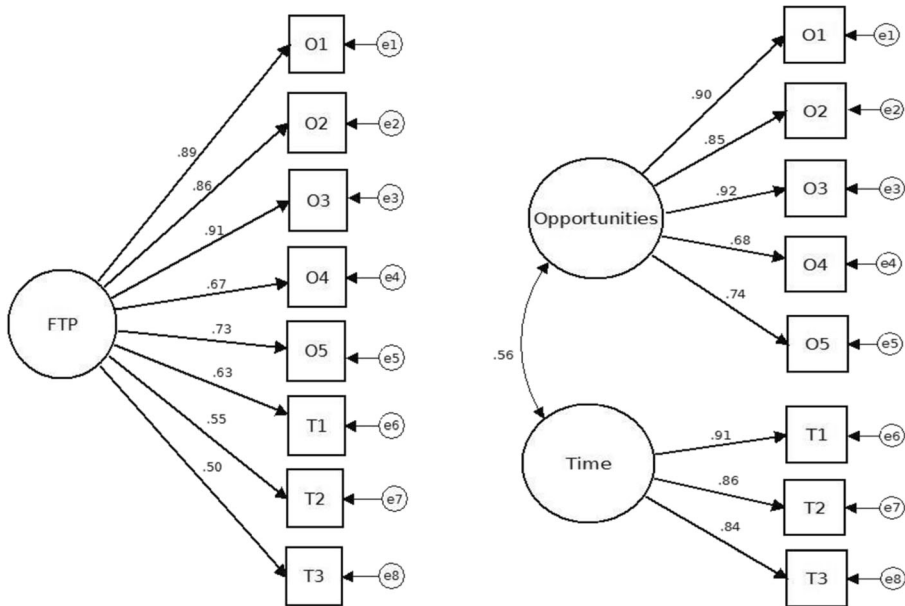


Fig. 2 Confirmatory analysis of Occupational FTP. Comparison of one and two-dimensional models. *Note.* O1-O5 represent items from the original dimension “focus on opportunities” and T1-T3 represent items from the original dimension “perceived remaining time” (Zacher et al. 2009). The retained model is two-dimensional: focus on opportunities and perceived remaining time ($\chi^2(19) = 86.51, p < .000$; $\chi^2/df = 4.55$; NNFI = .97; NFI = .97; CFI = .98; GFI = .96; AGFI = .93; RMSEA = .08)

interested” and “*I make an effort*” in the original scale were replaced by “*I am confident*” to better represent the definition of self-efficacy and to avoid a potential overlap with other motivational variables.

Learning value represents the importance workers’ attribute to learning and development activities relatively to other goals they pursue at work. We showed eight work-related goals’ categories (employment security, teamwork and cooperating, pay and career progression, organizational engagement and citizenship, well-being, new challenges, learning and development) adapted from Zacher et al. (2009) to participants. Each category was illustrated with two examples. For instance the category of “employment security” was illustrated with “having a permanent work contract” and having a steady job”. The category of learning and development activities included the following examples: “development of additional skills” and “participation in training”. We asked participants to read and to rank these eight categories by importance, from the most important to the least important goal. The value score was calculated as the importance ranking position of learning and development activities relative to the other activities. For instance, if learning and development activities were placed in the fourth position, a score of four was assigned to the participant. This resulted on an 8-point scale that we reversed to obtain higher scores representing higher learning value.

Results

Table 1 presents the means and standard deviations (overall and for each age group), as well as correlations for all study variables.

In line with our first hypothesis, age was negatively related to learning motivational beliefs. Specifically, age was negatively related to both learning self-efficacy ($r = -.26$, $p < .001$) and learning value ($r = -.16$, $p < .01$). As expected in our second hypothesis on the relationship between age and future time perspective, age was negatively related to focus on opportunities ($r = -.43$, $p < .001$) and positively related to constrained perceived remaining time ($r = .81$, $p < .001$). As the correlation between age and constrained perceived remaining time was very high, we checked for the severity of the covariance. The variance inflation factor (VIF) was 2.9, which was below the cut-off of 10 (Kutner et al. 2004). Moreover, as age and constrained perceived remaining time are two different concepts, both were retained in the model.

Consistent with the third hypothesis, focus on opportunities was positively related to both learning self-efficacy ($r = .52$, $p < .001$) and learning value ($r = .28$, $p < .001$). In contrast, constrained perceived remaining time was negatively linked to learning self-efficacy ($r = -.37$, $p < .001$), as well as to learning value ($r = -.19$, $p < .001$).

To investigate our last hypothesis regarding the mediating role of OFTP (Hypothesis 5), a path analysis of the hypothesized model was tested using maximum likelihood estimation in AMOS 20. A model integrating focus on opportunities and constrained perceived remaining time as mediators of relationships between age and learning self-efficacy and learning value was tested. This model fitted our data well ($\chi^2 [2] = 5.43$, $p = .07$; NNFI = .98; NFI = .99; CFI = .99; GFI = .99; AGFI = .97; RMSEA = .05).

Table 1 Descriptive statistics and intercorrelations by age groups and for the total sample

Variable	<i>M</i> (range)	<i>SD</i>	1	2	3	4	5
1. Chronological Age	40.13 (21–64)	12.59					
2. Focus on Opportunities <i>Total sample</i>	3.16 (1–5)	0.98	-.43**	(.91)			
<i>Young workers</i> (< 30; <i>n</i> = 188)	3.68	0.85					
<i>Middle-aged workers</i> (35–50; <i>n</i> = 155)	3.11	0.94					
<i>Mature workers</i> (> 50; <i>n</i> = 163)	2.65	0.92					
3. Constrained Perceived Remaining Time <i>Total sample</i>	3.69 (1–5)	1.25	.81**	-.52**	(.81)		
<i>Young workers</i> (< 35; <i>n</i> = 242)	4.70	0.51					
<i>Middle-aged workers</i> (35–50; <i>n</i> = 155)	3.91	0.89					
<i>Mature workers</i> (> 50; <i>n</i> = 163)	2.28	0.92					
4. Learning Self-efficacy <i>Total sample</i>	4.14 (1–5)	0.67	-.26**	.52**	-.37**	(.88)	
<i>Young workers</i>	4.36	0.58					
<i>Middle-aged workers</i>	4.14	0.69					
<i>Mature workers</i>	3.9	0.69					
5. Learning Value <i>Total sample</i>	4.86 (1–8)	2.05	-.16**	.28**	-.19**	.26**	-
<i>Young workers</i>	5.25	2.07					
<i>Middle-aged workers</i>	4.81	2.00					
<i>Mature workers</i>	4.48	2.02					

N 560. Scale reliabilities (α), where applicable, are presented in parentheses

* $p < .05$, ** $p < .01$

Results in Table 2 show that age had a significant indirect effect on workers' learning motivational beliefs with occupational future time perspective as the mediating variable ($\beta = -0.30$ for indirect effect on learning self-efficacy and $\beta = -0.15$ for indirect effect on learning value, $ps < .001$). Focus on opportunities had positive effects on both learning self-efficacy ($\beta = .45$, $p < .001$) and learning value ($\beta = .25$, $p < .001$). Constrained perceived remaining time had a negative effect on learning self-efficacy ($\beta = -.14$, $p < .001$), but no significant effect on learning value ($\beta = -.06$, *ns*). The effect size was relatively weak for learning value ($R^2 = .081$) and moderate for learning self-efficacy ($R^2 = .286$).

Table 2 Standardized coefficients (β) for direct, indirect and total effects

Variable	Direct effect		Indirect effect		Total effect	
	LSE	LV	LSE	LV	LSE	LV
1. Chronological Age	-	-	-.30	-.15	-.30	-.15
2. Focus on Opportunities	.25	.45	-	-	.25	.45
3. Constrained Perceived Remaining Time	-.14	-	<i>ns</i>	-	-.14	<i>ns</i>

LSE learning self-efficacy, *LV* learning value

All values are significant at $p < .001$

Discussion

The aim of the present study was to explain the relationship between workers' age and their motivation to learn based on propositions of socioemotional selectivity theory. In the following, we first discuss our results, and then discuss some practical implications and limitations of our study.

Our results show negative relationships between age and learning self-efficacy and learning value. However, results from path analysis suggest that the relationships of age with learning self-efficacy and learning value are fully mediated by workers' occupational future time perspective. Focus on opportunities positively predicted a learning self-efficacy and a value attributed to learning and professional development. However, constrained perceived remaining time predicted only learning self-efficacy positively, but not their learning value. The lack of a significant effect of constrained perceived remaining time on learning value might be due to the nature of our sample. Highly educated workers may have integrated the importance of education in their self-concept and continue to value learning and development activities because these activities characterize them. Moreover, recent literature shows that the complexity of the job which is often related to the level of education, has an impact on the perceived support for workplace learning (Harteis et al. 2015). Possibly, learning might be more valued by the social environment of highly educated workers.

These findings align those of Maurer et al. (2003). These authors showed that age was negatively related to formal learning intentions but this small correlation ($r = -.11$) disappeared when they included beliefs and situational variables in their model. Our results show that employees' future time perspective fully accounts for the negative relationships between age and learning motivational beliefs and thus aligns with the findings of a number of other studies that discussed age as being a "proxy" variable and having consequently no real predictive power on the outcome variables (e.g. Carstensen 1995; Kanfer and Ackerman 2004; Kooij et al. 2008). Also, Kooij and Zacher (2016) showed that age had indirect effects on learning goal orientation and attitudes toward learning through constrained perceived remaining time.

Our correlational analyses showed a negative relationship between age and focus on opportunities and a positive relationship between age and constrained perceived remaining time. These links were preserved in path analyses, suggesting that as employees get older, they perceive fewer opportunities at work and perceive the remaining time at work to be more constrained. Focus on opportunities, in turn, was positively related to learning self-efficacy and learning value, whereas constrained perceived remaining time was negatively related to learning self-efficacy and learning value. However, the path analyses results indicate that the dimensions of occupational future time perspective act differently in predicting learning motivational beliefs.

Interestingly, employees' focus on opportunities positively predicted learning self-efficacy and value, whereas constrained perceived remaining time predicted only learning self-efficacy. In other words, learning value is predicted by employees' perceptions of future opportunities at work but not their perceptions of remaining time. In contrast, employees' learning self-efficacy seems to be associated with both dimensions of occupational future time perspective. This suggests that perceiving time left in

one's occupational life does not impact the importance that a specific activity has for the person, but it would impact his or her beliefs about own capacities to realize this activity. However, these interpretations need further research, for instance using qualitative interviews on future time perspective and motivational beliefs.

In summary, our results suggest that occupational future time perspective is an important predictor of motivation to learn. An intervention focused on workers' perceptions of opportunities and extending their constrained perceived remaining time at work could increase their learning self-efficacy. It appears that increasing positive perceptions of opportunities at work are positively associated with workers' perceived value of learning activities at work. Experimental studies showed that manipulations of participants' future time perspective reduced age-related differences (Löckenhoff and Carstensen 2007). Further research should test experimentally the effect of future time perspective on motivation to learn.

Practical Implications

The present study has several practical implications for organizations and managers. First, workers seem to be more motivated to learn and develop when they perceive more opportunities in their occupational future. A way for organizations to motivate their workers would be to offer them diverse possibilities for training and development or for being promoted. If there are already different opportunities proposed to workers, it might be interesting for supervisors to make them realize that they are also concerned by these opportunities. Workers who perceive less future opportunities at work are less confident to learn and they value professional development less. Also, workers who perceive the remaining time at work as limited, believe that they are less capable to learn. Practically, by increasing opportunities for promotion, learning and development and also possibilities to continue to work and making these visible and accessible to organizational members of different ages, it is likely to enhance workers' motivation to learn. Future research needs to focus on contextual antecedents' of occupational future time perspective.

In addition, individuals' perceptions of opportunities and remaining time may be influenced by using self-assessment techniques and/or via training of direct supervisors who learn to give constructive feedback on the perceptions of their employees concerning occupational time. Learning self-efficacy can be reinforced through its four sources of information that form once self-efficacy and that are mastery experiences, vicarious experiences, persuasion and physiological influences (Bandura 1977, 2009). As suggested by Maurer (2001), these four sources can also explain the negative relationship between chronological age and employees' learning self-efficacy. First, mastery experiences are related to employees' past experiences in a given task. A higher degree of employees' past participation in learning and development activities leads to higher levels of learning self-efficacy (Maurer and Tarulli 1994). It is therefore important to assure equal opportunities for all workers, independently of their age, to participate in learning and development activities. Second, the observation of others who have similar characteristics performing a task with success (vicarious experiences) enhances observer's self-efficacy (Bandura 1977, 2009). It is therefore important to provide examples of effective co-workers of a similar age and who successfully

participate in training programs and other professional development activities. Finally, encouragement and support might also enhance workers' learning self-efficacy.

Limitations and Future Research

The present study is not without some weaknesses. First, we used two motivational beliefs, learning self-efficacy and learning value to better capture workers' motivation to learn. However, learning value was operationalized in a general unidimensional way. Further research should examine the concept by measuring its four components (attainment value, intrinsic value, utility and costs) as proposed by Eccles and Wigfield (2002), to allow for a more comprehensive assessment. Moreover, it would be interesting to examine the way future time perspective influences these different aspects of learning value. As learning value was measured with only one item, statistical analyses such as structural equation modeling could not be realized as each latent variable requires at least two observable indicators. As the variance of learning value explained by our model was low, other predictors such as goal orientation (Diethert et al. 2015) or working conditions (Thieme et al. 2015) might be important to take into account.

Another limitation of the present article is that we only have limited information about the companies where our participants are employed. As motivation to learn is not only determined by individual factors but also by contextual ones, we suggest to take into account organizational factors such as learning climate, in further research on workers' motivation to learn and develop. Third, only self-rated measures were used in this study. Collecting supervisor ratings may offer multiple ratings of employees' occupational future time perspective and learning motivational beliefs.

Note also that results obtained in the present study might be specific to a highly educated workers' population. Learning self-efficacy and learning value might be higher than in a sample of low educated workers. Further research should also collect data from less educated workers. And, although a path analyses allows to theoretically investigate conceptualized causal directions, this research is cross-sectional and does not allow us to draw any causal relations between investigated variables. A longitudinal design could offer the possibility to examine motivational dynamic across time. Finally, in the present article, learning was operationalized as professional development activities. Participants might have interpreted this general wording as exclusively referring to formal learning. However, learning happens in many ways, formally and informally (Knight 2002). Although it is difficult to assess all types of learning in a single study, future research should also take into account motivation to learn in informal learning contexts.

To conclude, our findings provide support for the assumption that the relationship between age and motivation to learn and develop can be explained by occupational FTP. Individuals who focus on opportunities in their occupational future tend to feel more capable of learning and developing professionally and they attach more value to professional development. In contrast, employees who perceive their remaining time left at work to be constrained have lower learning self-efficacy. We suggest that further research on workers' motivation to learn takes their occupational future time perspective into account.

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