

Fit between workers' competencies and job demands as predictor for job performance over the work career

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Abstract In modern work environments, employees need to flexibly adjust their abilities to an increasing complexity of their work place demands. We assumed that a fit between demands and individual abilities might positively influence work ability, job-related self-efficacy, and job satisfaction as important indicators of job performance. A misfit on the contrary, might have adverse effects and interfere with job performance measures. Linking to the demographic change, it is even more important to analyze if age has an impact on the association between fit or misfit and performance outcomes to reveal evidence for age specific intervention strategies.

We asked 103 employees and 15 supervisors of a production company to rate individual abilities and work-place demands in the sensory, motor, and cognitive fields to identify associations between a fit/misfit and outcomes that influence job performance.

Our analyses showed that a fit/misfit between subjectively perceived demands and abilities in motor control influenced job-related self-efficacy. This was particularly true for blue collar workers and for older employees. A fit/misfit between the supervisor- and employee-rated abilities to learn new tasks had a high impact on work ability. Both white and blue collar workers as well as middle aged and older employees were sensitive to this effect. A fit/misfit between employee- and supervisor rated ability to deal with high task complexity was not associated with job satisfaction over the entire group, but in white collar workers and older employees.

We conclude that a fit/misfit between work abilities and demands as well as between self and supervisor ratings of the employees' abilities has to be constantly evaluated with regard to age and work type to maintain healthy and productive employees.

Passung zwischen Kompetenzen der Mitarbeiter und Anforderungen des Arbeitsplatzes als Prädiktor für Leistung über das Arbeitsleben

Zusammenfassung In der modernen Arbeitswelt ist es erforderlich, dass sich Arbeitnehmer flexibel an die wachsende Komplexität der Arbeitsplatzanforderungen anpassen. Wir fragten uns, ob eine Passung zwischen Arbeitsplatzanforderungen und individuellen Fähigkeiten sowohl die Arbeitsfähigkeit, als auch die arbeitsplatzbezogene Selbstwirksamkeit und Arbeitszufriedenheit als wichtige Indikatoren von Arbeitsleistung positiv beeinflussen. In Bezug auf den demographischen Wandel ist es von besonderer Bedeutung, altersspezifische Zusammenhänge von Passung und Arbeitsleistung zu untersuchen, um gezielte Interventionen zu entwickeln.

Wir befragten 103 Mitarbeiter der Produktion und Verwaltung im Alter von 19–66 Jahren ($M = 42.11$ J., $SD = 11.46$ J.) und 15 Vorgesetzte einer Produktionsfirma. Die Befragten sollten ihre individuellen Fähigkeiten und Anforderungen am Arbeitsplatz und die Vorgesetzten die Fähigkeiten ihrer Teammitarbeiter in Bezug auf Sensorik, Motorik und Kognition einschätzen. So sollte eine mögliche Beziehung zwischen Passung/Nichtpassung und Arbeitsleistung identifiziert werden.

Unsere Analysen zeigten, dass die Passung oder Nichtpassung von subjektiv wahrgenommenen Anforderungen und Fähigkeiten im Bereich motorischer Kontrolle die

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Selbstwirksamkeit beeinflusste. Dies traf besonders auf gewerbliche und ältere Mitarbeiter zu. In Bezug auf die Lernfähigkeit hatte eine Passung zwischen Selbsteinschätzung und Beurteilung durch den Vorgesetzten einen positiven Effekt auf die Arbeitsfähigkeit. Dies galt für Mitarbeiter der mittleren und älteren Altersgruppe sowohl in Produktion als auch Verwaltung. In Bezug auf die Fähigkeit, komplexe Aufgaben zu bewältigen, hatte eine Passung zwischen Selbst- und Vorgesetztenbewertung einen Einfluss auf die Arbeitszufriedenheit vor allem bei Angestellten in der Verwaltung und bei älteren Arbeitnehmern.

Wir schließen aus unseren Ergebnissen, dass eine Passung sowohl zwischen Fähigkeiten und Anforderungen am Arbeitsplatz als auch zwischen Selbst- und Vorgesetzteinschätzung fortwährend evaluiert werden sollte, um die Gesundheit und Arbeitsfähigkeit der Mitarbeiter zu erhalten. Bei diesen Evaluationen sollten insbesondere das Alter und die Art der Arbeit berücksichtigt werden.

Keywords Age · Fit · Health · Job satisfaction · Work ability · Task requirement · Task related abilities

1 Introduction

Modern work-places are characterized by an increasing specificity of work demands on the one hand (Campbell et al. 1993; Vetter 2005) and the need for job specific versatility of employees on the other hand (Volkholz and Köchling 2001). Task relevant abilities are necessary to manage the ever-increasing requirements of complex work situations. This is true not only for cognitive, but also for perceptual and motor competencies. Examples for job related competencies are abilities to learn new tasks or to perform well-learned complex tasks in changing contexts. Not only pure competencies are necessary for high job performance, but also the individual abilities must correspond to the requirements of the work place (Volkholz 2006). Particularly, due to the increase of job-related demands and associated knowledge, it is more and more important to determine a fit/misfit between individual skills and job demands (Volkholz 2006).

It has been shown that a fit between workers' competencies and job demands with regard to task complexity plays an important role in preventing age related diseases (Andel et al. 2005; Volkholz 2006). Excessive work-load or too few work demands pose a risk to health. Not only being under or over challenged is negatively correlated with health, excessive work demands in one work field and an under challenge in another field can accumulate to an even higher health risk (Volkholz 2008). Investigating the fit/misfit of work demands and abilities and its relation to health, Volkholz (2008) revealed that in case of a fit 43% of the employees had no health problems. In the group of participants with

under challenging work demands only 35% had no health problems and in case of a possible excessive work demands only 18% had no health problems. A double misfit of work related demands and abilities lead to no health problems in 14%, 20% were unable to work and 32% had more than four problems with their health (Volkholz 2008).

Because of the increase of task complexity in modern work contexts and thus the need to switch flexibly between different task types, a fit between abilities and demands is essential not only on a task-specific level, but also on a cognitive meta level. These cognitive abilities concern training in new work fields, learning new tasks, and the use of already learned skills in changing work contexts (Morgeson and Humphrey 2006; Pulakos et al. 2002). These abilities are not only individually very diverse but they also often decrease with age in different aspects of work requirements and work specific abilities (Baltes et al. 1989; Classen and Cohen 2003; Verhaeghen and Marcoen 1996). Against the background of the demographic change and a constantly ageing work population it is necessary to analyze the influence of age and age-related differences on the consequences of fit or misfit.

Subsequently physical and mental performances in older workers have predominantly been discussed within a deficit model of aging. In particular, learning abilities and task flexibility are less expected from older employees as compared to younger colleagues (Gold et al. 2010; INQA 2005; Madden et al. 2010). However, studies showed that this prejudice, which was also influenced by negative self-ratings of older employees (Levy 1996), is slowly changing and, over last years, has been increasingly revisited (Börsch-Supan et al. 2005). Recent investigations clearly show that also older adults are able to increase knowledge and to learn unpredictable tasks (Morgeson and Humphrey 2006; Simon et al. 2010). Against the background of this competence approach specific instruments as the vitality measuring station ("Vitalitätsmessplatz") or the work ability index (WAI) have been developed to identify the influence of age and work environment on deficits and potentials in physical and mental performance (Meißner-Pöthig 1997; Tuomi et al. 1995). Whereas the vitality measuring station considers more biological aging processes (Meißner-Pöthig 1993; Tuomi et al. 1995), the WAI focuses on the maintenance of work ability in a holistic approach with reference to health management, work place design, human resource management and the consideration of social surroundings (Ilmarinen and Tempel 2002). In context of this competence-approach, age-related losses are opposed by emerging new qualities and an increase of competencies in older workers. These qualities enable the compensation of losses and supplement competencies of younger coworkers. It can be argued that investigations should not focus on age-related decline alone, but also on age sensitive and work re-

lated fits/misfits and specific performance outcomes. However, systematic age-dependent investigations of the consequences of a fit/misfit between respective workplace demands and individual competencies are rare or only focus on specific aspects, such as task complexity (Andel et al. 2005; Kolev et al. 2006; Kröger et al. 2008).

Self-evaluation of performance is important in the context of self-organization within a work field and thus is the basis for negotiation goals (Drucker 1954). Furthermore appraisals are used for purposes of employee development (Cleveland et al. 1995). Besides the fit between abilities and work demands in employees, also the fit between supervisor and employee ratings of abilities has been considered to be a predictor for work ability. In a longitudinal study Ilmarinen and Tempel (2002) came to the conclusion that worker-centered leadership and behavior and the social environment have the strongest influence on the employability of older workers (Ilmarinen and Tempel 2002). It has also been shown that the role of the supervisor is important in context of health of their employees (Volkholz 2006). Thus, the significance of a fit between employees' self-ratings of abilities and their supervisors' estimates should be further elucidated (Ilmarinen and Tempel 2002).

In order to rate job demands and abilities, reliable items are necessary to get an insight into work characteristics and abilities. Therefore items out of the work design questionnaire, from the job ability inventor and from the questionnaire for work-place analysis had been used (Frieling and Graf 1978; Morgeson and Humphrey 2006; Pulakos et al. 2002). Ability ratings are reliable measures by individual estimation of one's abilities and of the supervisor ratings (Bandura 1986; Hoffman et al. 1991).

However, fit and misfit between competencies and job-related demands as underlying or determining factors over the working life have never been studied systematically in the wide range of task relevant aspects in companies (Frieling and Graf 1978; Morgeson and Humphrey 2006; Pulakos et al. 2000). Besides a measure to assess work ability, we used self-efficacy (Abele et al. 2000; Stajkovic and Luthans 1998) and job satisfaction (Warr et al. 1979) as measures for task performance.

We expected that a misfit between abilities and work requirements defined as excessive or deficient abilities compared to the actual work environmental requirements would lead to over or under load and in turn to low job satisfaction and job-related self-efficacy and thus to a low job performance. The same was hypothesized for a misfit between self and supervisor ratings of employees' abilities. In order to identify subgroups of potential misfits we expected age and work sector specific misfits to have a significant impact on the outcome variables.

Table 1 Distribution of age, gender, and work field across the sample

Demographic characteristics	Age (range)	Gender (m/f)	Work field (blue/white collar)
Younger workers	19–29	15/3	13/5
Middle-aged workers	30–45	32/11	14/28 (1 missing)
Older workers	46–66	39/3	23/18 (1 missing)

2 Methods

2.1 Sample

One hundred and three employees of a production company participated in the study. They were not paid for participation, but freed from their working time. Each participant had been informed and submitted a written consent. The participants were between 19 and 66 years of age (Mean (M) = 42.11, Standard Deviation (SD) = 11.46) and classified as younger (<30 years; n = 18, M = 24.33, SD = 3.38), middle-aged (30–45 years, n = 43, M = 38.67, SD = 4.09), and older workers (>45 years; n = 42, M = 53.26, SD = 5.46) as well as blue (n = 50) or white collar workers (n = 51), respectively. Two out of the 103 participants did not provide information about their work field (cf. Table 1). For information about gender and age with regard to the work field see Table 1.

2.2 Measures

In order to cover all aspects of work related requirements and abilities of employees in this study we inquired about demands and abilities regarding auditory, visual and sensory perception, motor control, and physical adaptivity, as well as meta competencies like task learning, task complexity and attention (cf. Table 3).

The employee-questionnaire was separated into two parts, self-rated job requirements and individual abilities (cf. Table 2). Both parts included the same 33 items adapted from four different sources. These sources were the work design questionnaire (n = 5) (WDQ) (Morgeson and Humphrey 2006), the work ability inventory (n = 17) (FAA) (Frieling and Graf 1978), the job adaptability inventory (n = 8) (JAI) (Pulakos et al. 2000) and additional questions developed by our own (n = 3). Participants had to rate on a 5 point Likert scale the respective demand (from *never* to *often*) or ability (from *much worse* to *much better*) relative to all other demands and abilities at their work-place (cf. Pulakos et al. 2000). Table 2 gives examples for demands and abilities items.

The 33 item questionnaire consisted of 8 sub-dimensions. The items to assess eight work relevant characteristics have been used out of the following sources: Motor control items were used out of FAA (Frieling and Graf 1978), items to ask

Table 2 Examples for items that have been used to measure fit/misfit between self-rated task-relevant requirements as well as self- and supervisor-rated abilities of employees

Self-rating requirements	Self-rating ability	Supervisor-rating ability
Compared to all other requirements it is never... often... required to...	Compared to all other abilities I am much worse... much better... in...	Compared to all other abilities he/she is much worse... much better... in...
... learn new methods	... learning new methods	... learning new methods
... perform complicated or complex tasks	... performing complicated or complex tasks	... performing complicated or complex tasks
... use precision tools to perform exact and fine tasks	... using precision tools to perform exact and fine tasks	... using precision tools to perform exact and fine tasks

task complexity came out of WDQ and JAI (Morgeson and Humphrey 2006; Pulakos et al. 2002), task learning items were all used from the JAI (Pulakos et al. 2002), items to ask attention were used from WDQ and JAI (Morgeson and Humphrey 2006; Pulakos et al. 2002) and all single items to ask auditory, sensory perception, and physical adaptivity had their source in the FAA (Frieling and Graf 1978). Items were aggregated into scales in terms of content for the different work relevant aspects. Scales for visual perception included four items, scales for auditory and tactile perception and physical adaptability included one item each. For motor control eleven items were used, task complexity included five items, learning included four, and attention five items (cf. Table 3). Proof of reliability followed after factor analyses of the aggregated variables by Cronbach's Alpha (Cronbach 1951).

Furthermore, supervisor ratings about the abilities of their employees in the mentioned eight fields were assessed. Therefore 15 supervisors were asked for visual, auditory, and sensory perception as well as for motor control abilities, competencies in learning, attention, and dealing with task complexity, and physical adaptivity (cf. Tables 2 and 3) for each individual employee.

2.3 Outcomes

We used three measures for task performance, i.e., work ability (Tuomi et al. 2006), self-efficacy (Abele et al. 2000; Stajkovic and Luthans 1998) and job satisfaction (Warr et al. 1979). As a measure for work ability an adapted version of the WAI was used including questions about self-assessed work ability, number of diagnosed diseases, impairments and absent days of illness or injury (Range: 14–28; Mean = 23.88; SD = 2.83) (Tuomi et al. 2006).

Four of the six items of the original scale by Abele et al. (2000) to measure self-efficacy have been included in our study (cf. Abele et al. 2000); the values ranged from 1.75 to 4.00 ($M = 3.32$; $SD = .53$) with Cronbachs $\alpha = .38$.

Job satisfaction was assessed by including 15 facets from the original job satisfaction scale from Warr et al. (1979) and

colleagues and two additional facets from the Eurobarometer (Saris 1997; Warr et al. 1979) (Cronbachs $\alpha = .92$ out of the 17 items. Range in this study: 1–4.88; Mean = 3.63; $SD = .64$).

2.4 Predictors and calculation of fit

We chose the items depending on their source and calculated a confirmatory factor analyses to confirm the factors within each scale. Therefore we modeled the scales with the items out of the questionnaires to describe work designs (Frieling and Graf 1978; Morgeson and Humphrey 2006; Pulakos et al. 2002). Table 3 gives an overview of factor loads and the number of items, which were used.

In order to assess the effect of fit/misfit on the outcome measures a regression model was used that included interactions of self-rated demands and abilities, self- and supervisor ratings of abilities, respectively (cf. Table 4). Interactions between demands and abilities were calculated for the whole sample and separately for different age groups (younger, middle aged and older workers) and type of work (white and blue collar workers). Variables were centered before the analyses. Additionally, the depending variables were controlled for team membership using the fixed effect approach of clustering. To identify the influence of the fit or misfit between self-rated abilities and demands, the interaction terms of the eight work place relevant aspects were included as predictors in regression analyses.

3 Results

As we hypothesized, regression analyses showed indeed a significant impact of fit/misfit on job performance for specific dimensions. A significant association of job-related self-efficacy with a fit between abilities and demands in motor control was identified for the whole group (cf. Fig. 1; R -Square = .057; $p = .017$). Both, workers with high and low abilities in motor control revealed high self-efficacy

Table 3 Number of items, Cronbach's Alpha, range, means and standard deviations of the items to assess self-(ability_E) and supervisor-ratings (ability_S) of abilities and demands (demand) in all eight job-related fields

Dimension	No. of items	Cronbach's Alpha	Range (ability_E)	Mean (SD)	Range (ability_S)	Mean (SD)	Range (demand)	Mean (SD)
Auditory perception	1	n/a	1–5	2.98 (.94)	1–5	2.18 (.120)	2–5	3.37 (.76)
Visual perception	4	.78	1–5	3.32 (.67)	1–5	2.87 (1.09)	2–5	3.4 (.79)
Sensory perception	1	n/a	1–5	3.41 (.76)	1–5	2.62 (1.28)	2–5	3.44 (.75)
Motor control	11	.84	1–5	3.20 (.79)	1–4.36	2.43 (1.03)	1–5	3.45 (.84)
Task complexity	5	.65	2.5–5	3.47 (.53)	1.67–4.83	3.42 (.66)	1–5	3.36 (.78)
Task learning	4	.66	1.5–4.6	3.41 (.53)	1.25–5	3.21 (.73)	1–5	3.32 (.81)
Attention	5	.57	2.4–5	3.64 (.60)	2.4–5	3.75 (.66)	2–5	3.53 (.74)
Physical adaptivity	1	n/a	1–5	2.72 (.84)	1–5	2.6 (1.36)	1.5–5	3.26 (.73)

Table 4 In order to measure the influence of fit between self (ability_E, independent variable IV1) and supervisor (ability_S, IV2b) rated abilities as well as between self-rated abilities (ability_E, IV1) and job

related demands (demand, IV2a), the interaction terms (IV3) between ability_E and demand (IV1 $\times$ IV2a) and between ability_E and ability_S (IV1 $\times$ IV2b) have been used. DV = dependent variable

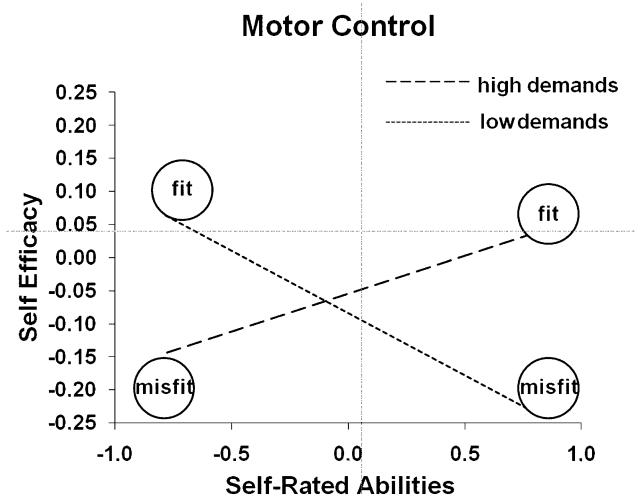
DV	IV1	IV2a	IV2b	IV3
WAI	ability_E	demand	–	IV1 $\times$ IV2a
Job satisfaction	ability_E	demand	–	IV1 $\times$ IV2a
Job self-efficacy	ability_E	demand	–	IV1 $\times$ IV2a
WAI	ability_E	–	ability_S	IV1 $\times$ IV2b
Job satisfaction	ability_E	–	ability_S	IV1 $\times$ IV2b
Job self-efficacy	ability_E	–	ability_S	IV1 $\times$ IV2b

when the respective demands matched their abilities. Interestingly, high abilities in motor control were related to less self-efficacy in the case of being under challenged and even low abilities could be related to high self-efficacy when demands were appropriate. Further analyses revealed that a misfit between motor control abilities and demands had a particular impact on job-related self-efficacy in blue-collar-workers (R -Square = .111; p = .020) and in older employees (R -Square = .097; p = .061; cf. Table 5).

Regarding the fit between self- and supervisor ratings of meta abilities such as task learning and dealing with task complexity our analysis also revealed an impact on performance outcomes.

As shown in Fig. 3, work ability is higher if supervisors and employees agreed with respect to learning abilities across the entire group (R = .175; p = .001). Again this was true for both the high and low abilities range. The impact of misfit became stronger in middle aged (R = .299; p = .002) and older (R = .142; p = .092) workers. The misfit in both white (R = .160; p = .014) and blue collar workers (R = .184; p = .032) had an influence on their work ability scores.

Job satisfaction depended on a fit between self and supervisor ratings with respect to task complexity specifically for those employees with high supervisor rating even though

**Fig. 1** Fit/misfit of demands and abilities of employees in motor control had a significant influence on self-efficacy

there was only a tendency towards this direction for the entire group (R = .028; p = .105).

In white collar (R -Square = .057; p = .095) but not in blue collar workers and in older (R -Square = .131; p = .030) but not middle aged and younger workers a

Table 5 R-Squares and *p*-values for influence of interactions on outcomes

	Demand and ability in employee Motor control and impact on self-efficacy		Employee and supervisor Task learning and impact on work ability		Employee and supervisor Task complexity and impact on job satisfaction	
	R-Square	<i>p</i>	R-Square	<i>p</i>	R-Square	<i>p</i>
Overall	.057	.017**	.175	.001***	.028	.105
White collar	.028	.257	.160	.014*	.057	.095*
Blue collar	.111	.020**	.184	.032*	.029	.273
Young employees	.046	.393	.169	.209	.108	.214
Middle aged employees	.008	.572	.299	.002***	.005	.665
Older employees	.097	.061*	.142	.092*	.131	.030*

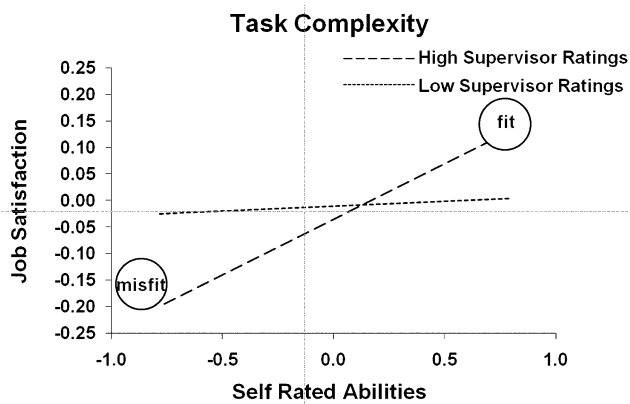
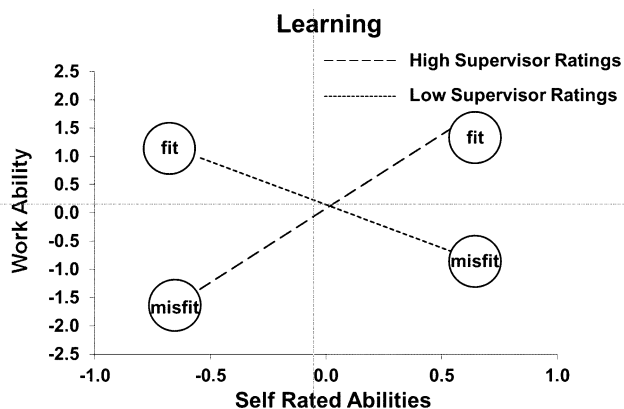
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

negative influence on job satisfaction of misfit with respect to task complexity was found (Fig. 2).

4 Discussion

It has been proposed that a fit between individual abilities and job demands gains increasing importance to maintain job abilities (Volkholz 2003). Thus, we expected that, excessive or under challenging work demands, indicating a misfit between individual competencies and task relevant demands, finally should result in a decrease of job performance (Volkholz 2006; Volkholz and Köchling 2001). Moreover, we also hypothesized the importance of a fit between ability ratings of employees and their supervisors as prerequisite for optimal placement of employees. Finally, we asked whether these relationships were particularly important in older workers for which age-stereotypes and prejudices might be one reason for such a misfit (Levy 1996) and if a possible misfit can be distinguished between blue and white collar workers. In order to identify these age and work place specific factors we analyzed the fit between self- and supervisor-rated abilities of employees and the fit between individual abilities and work related demands and their impact on work related outcomes. The results of the present study partly confirmed our hypotheses.

Because real work situations require a wide range of competencies we used a large scale of items to assess eight work-specific and work-general dimensions and to identify the influence of fit/misfit on measures for task performance. We found that a fit/misfit between employee-rated demands and abilities in motor control had an influence on job-related self-efficacy that is highly related to task performance. Self-efficacy as the judgment of the ability to accomplish the own task or obtain a desired result of a task is a useful predictor of performance in new or unpredictable work situations (Schunk 1983). In several studies, self-efficacy has also been positively related to learning abilities (Martocchio

**Fig. 2** Fit/misfit between supervisor- and employee-rated abilities of task learning had a significant impact on work ability**Fig. 3** A fit/misfit between supervisor- and employee-rated abilities of task complexity had a significant impact on job satisfaction

and Judge 1997) and has a strong relationship with mental health of employees, as measured by the General Health Questionnaire (cf. Goldberg 1972). Studies in organizational socializations have revealed a positive relation between low self-efficacy and high role orientations. Role orientation is here the manner in which individuals perform their roles and adjust to task requirements (Jones 1986). In addition, self-efficacy is negatively related with the resistance to change (Ashforth and Lee 1990). In motor control as one example of cognitively controlled abilities, our data reveal that job-related self-efficacy is reduced not only by too demanding tasks but also by tasks that are not sufficiently challenging. It has to be concluded that job performance, here represented by job-related self-efficacy, does not exclusively require high abilities of the worker but can also be achieved with lower abilities if task demands match with individuals' abilities. A reason for this finding might be that employees associate their self-efficacy with their own motor control abilities compared to abilities in perception, or task general abilities as such as attention, learning, or task complexity. Thus a demand-ability-fit in motor control might be even more important for self-rated self-efficacy than other dimensions.

Former studies have shown, that work quality is closely linked to work ability (Tuomi et al. 2001). Specifically, supervisor-employee-fit has been considered to be a predictor for work ability in older employees (Ilmarinen and Tempel 2002). Our results reveal that a misfit between self- and supervisor ratings has a significant impact on job satisfaction in white but not blue collar workers and in workers above 30 years of age (see Table 5 and Fig. 1). We found that self- and supervisor-rated abilities in task general aspects such as task complexity and learning lead to lower work ability scores and to less job satisfaction. In particular, we found that a misfit between self- and supervisor rated ability to learn new tasks had a negative influence on work ability index scores of the employees. The middle aged employees and to a lesser extent the older age group showed the strongest impact on adapted WAI scores as compared to the young group. These findings support the need of age specific human resource management and personal interactions between employees and their individual supervisor to prevent wrong evaluations based on age stereo-types and negative images of age (Bennett and Gaines 2010).

Although survey studies showed that prejudices are decreasing, older adults are still believed to be less able to handle tasks of high complexity than younger adults (Börsch-Supan, 2005; Maintz 2004). With regard to our data, a misfit between self- and supervisor ratings with respect to the ability to deal with complex work situations has an effect on performance measures, here on job satisfaction. Job satisfaction is also strongly related to perceived job characteristics such as responsibility and knowledge of results (cf. Wall et al. 1978).

Reasons for interactions between self- and supervisor-rated abilities only on a meta-level might be that supervisors are better able to estimate the meta-cognitive abilities of their employees than work-specific abilities, such as perception or physical adaptivity. A second reason might be a more general bias in the supervisor-rating due to prejudices towards specific employee groups like older workers (Bennett and Gaines 2010).

We conclude that a fit between work demands and abilities as well as self and supervisor ratings of abilities of the employees have to be constantly evaluated to maintain healthy and productive employees. Therefore, a work life career management has to be developed regarding physically and mentally demanding work fields and work-related further training measures over the working life. An early identification and prevention of a misfit between requirements at the work-place and the individual resources can contribute to the maintenance and improvement of task-general competencies as learning new tasks or dealing with task complexity. On the other hand, changing requirements can support and improve competencies until old age if self-efficacy of employees is strengthened by adequate placement, i.e. by a fit between abilities and demands. However, this also means that over or under challenging work demands increase the probability of decreased job-related self-efficacy. With reference to learning and dealing with high task complexity that means that employees in less demanding and supporting work context might miss incentives to train themselves even during their leisure time, which leads to reduced readiness and capacity for flexibility.

To summarize, with an aging workforce it is particularly important to develop age suitable work place designs and aging appropriate occupational careers under the aspect of task specific and task unspecific fit. To lay the foundations of these designs it is necessary to diagnose routines of work requirements and workloads in early working life and over the whole working age and not only towards the end of an individual career (INQA 2005). After determination of age specific aspects of fit or misfit counteractive preventing methods can be developed and applied to avoid a decrease of job performance. As an example, individually adjusted appropriately challenging and supporting environments might help to interfere with a possible age-related decline in learning abilities and task complexity competencies. This adjustment can prevent a subsequent vicious circle of reduced willingness or openness to work place changes on the basis of frustration and overtaking of new tasks and functions. Age adequate work-related requirements can thus support the preservation and improvement of naturally existing competencies (Volkholz 2008). Combined, an early identification and prevention of a misfit between work place specific demands and individual competencies might contribute to maintain or increase task performance in older age.

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