

## **Age diversity in work teams: A matter of clever management**

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**Abstract.** Increasing age diversity in work groups due to demographic changes in recent decades raises the question of whether age diversity benefits or harms teamwork. Research shows that both positive as well as negative effects of age diversity can be expected, depending on various context variables (e.g., task complexity) and specific team processes (e.g., activation of age stereotypes). We summarize related insights based on data from more than 745 natural teams with 8,848 employees in three occupational sectors (car production, administrative work, financial services). In addition, some variables were examined within a representative survey of the German workforce (N = 2,000). Based on these findings, seven important recommendations for the effective management of age-diverse teams can be derived. In this paper, we summarize these recommendations illustrated with central empirical findings.

**Keywords.** Age diversity, team work, management, task complexity, prejudice, leadership

### **1. Advantages and Disadvantages of age-diverse team work**

Based on theories of social categorization processes (van Knippenberg & Shippers 2007) and models of information processing in teams (Schulz-Hardt & Moitzisch 2012), age diversity in teams may result in advantages (e.g., utilization of differences in experience for problem solving) as well as disadvantages for teamwork (e.g., intensification of emotional conflicts in groups). Review articles on this issue (e.g., Wegge & Schmidt 2009) and meta-analytic studies (Joshy & Roh 2009) have shown, however, that *negative* effects of age diversity in natural teams are more likely than positive effects. Thus, more research is needed to identify the conditions favorable for utilizing age-diverse teamwork in organizations.

In a long-term research effort over nine years (see Ries et al. 2013; Wegge et al. 2012; Wegge & Jungmann 2015; Wegge & Schmidt 2015) it was analyzed why and when age diversity in work groups will have negative or positive effects on group performance, motivation and health of group members. The underlying research model integrates the common psychological theories on team composition and proposes that objective age diversity in teams increases the salience of age diversity (i.e. whether diversity is indeed observed by group members). When the salience of age diversity is high, team conflict increases and this yields low team effectiveness. However, it is further postulated that – under favorable conditions – beneficial effects should be observed, too. High appreciation of age diversity (i.e. positive judgments regarding the value of age diversity in team work), a positive team climate and high team task complexity (novelty) are considered as favorable moderating variables. Moreover, it was also examined how ergonomic task design and age-differentiated

leadership influences effectivity in more or less age-mixed teams. In the following, we summarize the latest insights that have been gained in this project in the form of seven recommendations.

## **2. Managing age diversity effectively: Seven important starting points**

### *2.1 Provide complex team tasks without high time pressure for age-diverse teams*

The influence of age composition on group performance and health disorders was examined using data from 4,538 federal tax employees working in 222 natural work teams (Wegge et al. 2008). As hypothesized, age diversity correlated positively (resp. negatively) with performance in groups solving complex (resp. routine) decision making tasks. This finding was replicated when analyzing performance data collected one year later. Age diversity was also positively correlated with health disorders, but only in groups working on routine decision-making tasks. The findings provide support for information processing models of team work positing that diversity can have positive effects on performance outcomes when tasks require complex decision-making. In our view, this pattern of results is also consistent with other models (e.g., the theory of Baltes 1979 and the taxonomic approach of Warr 1997) that propose that age-related deficits may be reduced by high task variety and be compensated for through selection, optimization and compensation strategies under conditions of complex task requirements without much time pressure.

### *2.2 Reduce age diversity salience in teams*

In two studies (Ries et al. 2010a; Wegge et al. 2011) it was found that age differences in teams are positively correlated with age diversity salience ( $r = .55$  in Ries et al. 2010a and  $r = .24$  in Wegge et al. 2011). In addition, the findings show that the negative relationship between age diversity salience and innovation (rated by employees) as well as burnout was fully mediated by conflicts within groups, and that high age diversity salience was positively correlated with age discrimination ( $r = .14$ ) and the activation of stereotypes against older workers ( $r = .20$ ). Thus, the salience of age differences can also lead to burnout (see Ries et al. 2012). Therefore, in order to enhance the effectiveness of age diverse teams it is recommended to act towards the reduction of age diversity salience. This can be achieved by establishing a balanced age distribution in teams (Fritzsche et al. 2014) or by leadership training (Wegge et al. 2012, cf. below) promoting a non age-related communication and interventions that help to refocus self-categorization of team-members away from age differences in teams to superordinate aspects of team work.

### *2.3 Establish a positive team climate*

The expected moderating effect of team climate on the relationship between age diversity and team efficiency was tested in a field study including 66 work teams from the administrative sector (Ries et al. 2010b). Results confirm the expected moderating effect. In particular, whereas in teams with a positive team climate, an increase in age heterogeneity leads to increments in innovative performance, in teams with a negative team climate, age heterogeneity contributes to a decrease of innovative performance. Thus, in managing age diversity, team leaders should enhance team climate by giving

clear definitions of objectives and visions, supporting innovation and focusing on refinement of team outcomes.

#### *2.4 Promote high appreciation of age diversity in teams*

Ries et al. (2012) investigated the moderating effect of appreciation of age diversity in a subsample of 140 tax-office teams. It was expected that the negative associations between age salience and group effectiveness should be more (less) pronounced in groups where group members have a low (high) level of appreciation of age diversity. In addition, it was hypothesized that team conflicts mediate this moderating effect. In support of this idea, results from a moderated mediation regression analysis indicated that the moderating effect of appreciation of age diversity is based on different levels of conflicts within groups. In the same vein, Wegge et al. (2011) found in a cross lagged panel design with 69 teams from pension offices that high appreciation of age diversity yields higher job satisfaction, lower conflicts, and higher innovation. Similar findings regarding the effect of diversity beliefs are often found in the literature (see, for example, Hentschel et al. 2013). Thus, attitudes focusing on diversity do matter and should be monitored and influenced accordingly.

#### *2.5 Reduce age stereotypes and age discrimination at work*

The representative survey of the German workforce (N = 2,000; Wegge et al. 2011) also examined potential interactions between the salience of age diversity in teams and the strength of age discrimination (ageism) experienced at the workplace. It was found that the association between age diversity salience and health of employees was moderated by age discrimination. When employees perceived high age discrimination at work, the salience of age diversity in teams had a significant negative impact on health ( $\beta = -.14$ ). This effect was not observable in employees with low levels of age discrimination ( $\beta = .06$ , n.s.). Thus, the detrimental effects of age diversity salience seem to be most prominent under conditions of high age discrimination.

Interestingly, a closer inspection of this data shows that these links also vary for different age groups (Liebermann et al. 2013). Following the arguments of the social identity theory, the negative influence of age diversity on an individuals' health depends on the extent to which one identifies with the age subgroups in the team. Employees that are positioned in the middle of the age continuum should be able to identify with both younger and older employees. In contrast, team members positioned at the extreme ends will have difficulties identifying with the group at the other end. Additionally, for those at both extreme ends of the continuum, age is a more noticeable characteristic than for those positioned at the middle. Thus, it can be concluded that both younger and older employees will be more affected by working in age-diverse teams than middle-aged employees. Indeed, separate regression analyses for three age groups indicated that while age diversity had negative impact on the health of young and old employees, there was no relationship between age diversity and health for middle-aged employees.

#### *2.6 Promote the use of age-differentiated leadership*

Based on these findings, a modular training for supervisors was developed to address these recommendations and to improve team performance. In the first training module, information about age-related changes in performance and work motivation

were presented to supervisors. Additionally, the development and consequences of age stereotypes as well as appreciation of age differences were discussed. Building on this theoretical background, the supervisors deepened these topics in the second training module by discussing strategies and drawing practical implications for their everyday work life, including principles of age-differentiated leadership (Jungmann & Wegge 2015; Wegge et al. 2012). To teach and to assess the quality of age-differentiated leadership we have constructed a new questionnaire with 16 items that assess (a) general principles for leading age-mixed teams, (b) specific leadership behaviors directed to older employees and (c) specific leadership behaviors directed to younger employees (see FAF 16, Wegge et al. 2012). The training was conducted with 32 supervisors (209 employees) working in a tax office (Ries et al. 2013). The evaluation design consisted of a training group and a waiting control group. Data were collected before and four months after training. An additional follow up measure was conducted 12 months after the training. It was found that the training reduces age stereotypes, team conflicts, and enhances innovation.

### *2.7 Improve the ergonomic design of work places within teams*

Prior research suggests that appropriate team composition regarding age and ergonomic workplace design may reduce the decline of productivity in aging employees working at paced assembly lines. Fritzsche et al. (2014) investigated the simultaneous effects of both team level factors on individual absenteeism (time lost and frequency of absence) and team performance (22,821 errors) over one year in a sample of 56 natural car-manufacturing teams (N = 623). Results show that age was positively associated with absenteeism and mistakes in work planning. In contrast, controlling for physical workload, it was found that age-diverse teams were more effective than age-homogenous teams, but only if diversity was measured as a balanced mix across age categories (Blau index) rather than as separation of old and young (standard deviation).

## **3. Discussion**

The main goal of this long term research project was to analyze the influence of age diversity on team effectivity, including satisfaction, innovation and health of employees. Mediating and moderating variables like attitudes towards age diversity in teams and task complexity were also part of the analyses. Based on the consistent findings we can conclude that effective interventions for the successful integration of elderly employees in work groups are available and that combinations of measures that address ergonomic design issues, team composition, and leadership processes in teams are to be strongly recommended.

Future research should attempt covering the complexity of diversity in teams more appropriately by including more than one diversity attribute at the same time by analyzing the alignment of multiple characteristics between team members based on the faultline approach (hypothetical dividing lines that may split a group into subgroups; see Meyer et al. 2015). Using existing data from 232 employees working in 58 natural groups with four team members each, Breu et al. (2010) calculated faultlines regarding age, sex and tenure of team members. The results supported the assumption that stronger faultlines lead to more cognitive conflicts in teams and also to more burnout. Importantly, these results were found when controlling for traditional

diversity indicators. Hence, it can be concluded that the faultline concept is indeed fruitful and extends traditional research on team composition.

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