

## CHAPTER 7

# Constraining and enabling factors for establishing age-oriented corporate working and learning environments: Empirical evidence from the German metalworking and electrical industry, from the chemical and pharmaceutical industry and from retailing

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While there is widespread consensus among social scientists that an ageing and shrinking German labour force is making age-oriented working and learning conditions a necessity for German companies, empirical findings so far indicate that corporate human resources and work policies still fall short of establishing such conditions. The situation is particularly problematic for older employees (50+ age group), who are not generally provided with the crucial resources (up-to-date competences, physical and mental health) to maintain their work ability and employability up to normal retirement age. On the basis of new empirical findings in three core sectors of the German economy, this chapter presents differentiated data on these issues, because – this is a basic assumption – differentiation is important. Three possible explanations for the gap between discourse and practice are discussed briefly. Finally, it is argued that collective bargaining agreements can be a decisive enabling factor in promoting age-oriented working and learning conditions.

## 7.1. Introduction

There is a considerable gap between the level of public and scientific debate in Germany about the need to implement corporate learning and working environments that are capable of dealing with the foreseeable demographic changes, on the one hand, and actual corporate practices, on the other hand. By the late 1980s, the German government had started scientific programmes and initiatives to address the issue of demographic change <sup>(46)</sup>. Since then, an almost ‘unmanageable’ (Kistler, 2008) amount of literature – both conceptual and practical in nature – has been published <sup>(47)</sup> and numerous examples of good corporate practice have been documented <sup>(48)</sup>. In addition, according to company polls, demographic issues rank very highly on the strategic agendas of German firms, – even in (the wake) of the economic crisis (Adecco Institute, 2009). However, survey findings – e.g. the German Establishment Panel of the Institute for Employment Research (IAB) (Bellmann and Leber, 2011); the adult education survey (AES) (BMBF, 2011); BIBB’s continuing vocational training survey (CVTS) (Moraal et al., 2009) – show that, by and large, German firms do very little to create better working and learning environments for their (ageing) employees. When it comes to participation in continuing training, older, less qualified employees, part-time working women and workers with a migration background in particular are strongly disadvantaged (BMBF, 2011; Leber and Möller, 2007). If we look at other measures that might improve the employability and work ability of the workforce, for example better working conditions or working time arrangements, the available data also show that the needs of older workers are not addressed by corporate human resources policies (Bellmann et al., 2003; 2007; Brussig, 2011).

What are the barriers to creating ‘age-oriented’ working and learning conditions in Germany? Why, on the other hand, are (some) companies already addressing the issue of demographic ageing, i.e. what are the enabling factors for their actions, and what are they doing?

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<sup>(46)</sup> Prognos AG counted 177 publicly funded projects in Germany between 2005 and 2009 alone which directly addressed issues of demographic change and which had a practical consulting-oriented character (Prognos AG, 2010).

<sup>(47)</sup> E.g. HBS, 2009; INQA, 2005; Kocka and Staudinger, 2009; Kistler, 2008; Matthäi and Morschhäuser, 2009.

<sup>(48)</sup> INQA database <http://www.inqa.de/DE/Lernen-Gute-Praxis/Top-100-Gute-Unternehmenspraxis/inhalt.html> [accessed 16.10.2012].

Before these questions are addressed empirically, it is useful to clarify what age-oriented working and learning conditions mean. The term 'age-orientation' encompasses two aspects:

- (a) from the point of view of ageing (the process of growing older), age-oriented working and learning conditions comprise all those measures that allow employees to develop (or at least maintain) their personal abilities until retirement age (and beyond). Such measures could address issues of work-life balance and working time, continuous training, physical and mental stress reduction, and organisation of work (team work, job rotation);
- (b) from the point of view of being older, age-oriented working and learning conditions are those that are specifically aimed at the needs and circumstances of those already in the last phase of their working life (50+). How can they at least maintain or restore their work ability and employability? In principle the measures are the same as those described above, but take account of the special needs, interests, and also limitations of older employees. Although this age cohort – if not already well qualified – is particularly disadvantaged when it comes to competence development and physical and mental wellbeing, any sustainable change has to take into consideration the entire working life span.

The parallel (and compatibility) with the concept of continuous (lifelong) professional learning is obvious. The latter is considered a necessity in Germany for two reasons: first – and with respect to individual employees – ongoing socio-economic change within and outside the employment system<sup>(49)</sup> requires that they more or less permanently 'update' their competences to maintain their employability. Second – with respect to the individual company (as well as 'Location Germany' as a whole) – the foreseeable demographic ageing and the shrinking of the workforce requires learning and working conditions that activate hitherto unused potential of employees<sup>(50)</sup> to maintain competitiveness.

With regard to the way in which continuous professional training in Germany is institutionalised and organised, it is important to note that such training

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<sup>(49)</sup> Shift towards services, growing importance of 'interactive service work', globalisation/ internationalisation, new information technologies, etc.

<sup>(50)</sup> Despite the rallying cry of corporations and employers' associations about the severe lack of qualified (young) personnel (*Fachkräftemangel*), there are 1.5 million adults between the ages of 25 and 35 who have no formal (training) qualification (Destatis, 2011, p. 169). However, many qualified Germans and foreign migrants are formally over-qualified for the job they are actually performing.

mostly takes place within firms, i.e. in the context of the employment relationship (*betriebliche Weiterbildung*; type 1 learning according to the AES definition). According to the AES Trend Report for 2010, around 60% of all formal and non-formal adult education measures are of this type (BMBF, 2011). Although difficult to assess and measure, informal learning in the workplace is even more important (Baethge-Kinsky et al., 2006). Empirical evidence shows that there is a strong interrelationship between individual competence development and working conditions: the more opportunities work processes themselves offer for learning, the higher the level of individual competence development (Baethge and Baethge-Kinsky, 2004). It is also well documented that older and/or less qualified employees in particular prefer informal (on-the-job) learning environments to formalised learning situations (e.g. seminars in classrooms) (Tippelt et al., 2009). Informal learning is embedded in the daily work process and requires, as was mentioned above, work tasks and organisational structures that stimulate the acquisition of new knowledge and skills, both technical/professional and social/communicative/methodological.

This chapter presents empirical results from a recently completed research project financed by the German Initiative Neue Qualität der Arbeit (INQA). The project dealt with the potential and prospects of age-oriented labour policies in three core sectors of the German economy: the metalworking and electrical industry, the chemical and pharmaceutical industry, and retailing (Freidank et al., 2011; Tullius and Kaedtler, 2011). The aim of the chapter is threefold:

- (a) to show that demographic change (and its consequences) in the sphere of work has to be analysed and discussed with reference to sector and industry-specific differences. Such a perspective shows that demographic changes have different outcomes in different sectors of the German economy. In addition, variations become apparent in the way companies in different industries deal with demographic changes today;
- (b) to discuss why German corporations, by and large, seem to do little regarding age-oriented working and learning policies. One reason is that the 'demographic impact' differs between sectors. Another reason is the dominant economic paradigm and 'short-termism' regarding labour policies: because age-orientation is (or should be) an extensive concept (age management) with a long-term perspective, it is hard to legitimise in times of increasing competition and economic crisis. It is also complex in nature, which makes it difficult for many firms, particularly SMEs, to find the resources for implementing age-oriented measures. A third constraint is an institutional regulatory framework, created in the 1980s, that

established early retirement as the primary means to ‘deal’ with older employees. Although this institutional regime has changed significantly in the last couple of years, companies have not yet adjusted their employment policies;

- (c) to show the potential of a new collective bargaining agreement in the German chemical industry that seeks to balance the continuing need to allow for early retirement and opening new ways for age-oriented labour policies.

## 7.2. Methodology

The findings presented here come from two sources:

- (a) a standardised online and – additional – computer-assisted telephone interview survey of managers and works councillors in companies with more than five employees in the three industries <sup>(51)</sup> (Table 7.1);
- (b) short case studies in selected companies in these three industries, mostly consisting of lengthy interviews (1.5 to 2.5 hours) with the heads of the human resources departments and with members of the works council (usually the chairperson).

We also conducted interviews with representatives of the respective unions and employers’ associations (Table 7.2).

Table 7.1. **Standardised questionnaire**

Industry	Netsample managers (N=)	Netsample works councillors (N=)
Metalworking and electrical industry	229	211
Chemical and pharmaceutical industry	29	15
Retailing	216	85
Total	<b>474</b>	<b>311</b>

<sup>(51)</sup> The survey sample is drawn from a representative population of 4 500 companies provided by the German Federal Employment Agency. To allow for firm size, sector structure and works council density we used statistical loading factors. However, due to our methodology (online questionnaire plus additional telephone interviews), there might be selectivity effects. In addition, because of the small sample in the chemical and pharmaceutical industry, the illustrative power of the data in this sector might be further limited (although the response rate is good).

Table 7.2. **Case study interviews**

Industry	Company level	Employees'/employers' association
Metalworking and electrical industry	21	7
Chemical and pharmaceutical industry	8	2
Retailing	13	3
Total	<b>42</b>	<b>12</b>

### 7.3. Effects of demographic changes at sector/industry level

Before the questions posed above are discussed, it would seem worth making some brief observations on the three industries studied, as industry conditions produce different problems and outcomes in relation to demographic change.

The metalworking and electrical industry comprises roughly 23 500 companies, most of them (72%) with fewer than 100 employees, in which more than 3.5 million people (mostly men) are working. The biggest sectors are mechanical engineering (950 000 employees), automobiles (780 000), metalworking (530 000), and electrical engineering (530 000). The industry generates a sales volume of about EUR 770 billion, around 60% in foreign markets (all figures Gesamtmetall, 2010). Overall, the metalworking and electrical industry is a prime example of the German innovation and production model of diversified quality production (Sorge and Streeck, 1988). That model is based on skilled personnel (ISCED 3B, 4, 5B) capable of performing flexible tasks in high-technology production processes. Innovation is still predominantly located in Germany, raising the demand for skilled and highly-skilled (ISCED 5A, 6) labour <sup>(52)</sup>.

The German chemical and pharmaceutical industry employs about 415 000 persons today, 30% less than in West Germany alone before reunification in 1990 (VCI, 2011). In the same period, total sales increased from around EUR 100 billion to EUR 171 billion (almost 60% in foreign markets, compared with

<sup>(52)</sup> The international standard classification of education is a Unesco classification structure, to improve the international comparability of education statistics. The classification scheme ranges from ISCED level 0, pre-primary education, to level 6 the second stage of tertiary education (e.g. PhD) (Unesco, 2006).

42% in 1996; VCI, 2011). These figures not only indicate strong productivity gains<sup>(53)</sup> but also point to a strategic shift in this industry in the last 20 years. While high-volume standardised production and low-skilled labour have been outsourced to foreign locations and markets, more knowledge/innovation, technology and capital-intensive products and processes are located in Germany (Briken, 2004). Therefore, the marked decrease in total employment corresponds to an increase in the proportion of skilled labour: whereas in 1988 about 40% of all blue and white-collar employees were non-skilled or low-skilled, this group accounts for only 22% in 2006. Conversely, the share of skilled labour grew to 38%, and that of the high-skilled personnel to 40% (BAVC, 2007).

Both industries are also major players within the German industrial relations system. While the industrial relations system is no longer as stable (or predictable) as it used to be (Jacobi et al., 1998), within that system both the unions (IG Metall, IG BCE) and the employers' associations (Gesamtmittel and BAVC, respectively) in these two industries play an important role. Approximately 90% of the companies in the chemical and pharmaceutical industry are (still) members of the employers' association BAVC. In the metalworking and electrical industry the coverage is not as extensive as in chemicals, but both IG Metall and Gesamtmittel are still leading actors in the industrial relations system and forerunners when it comes to innovative general collective agreements. In both industries collective agreements directly addressing the issue of demographic change have recently been concluded: in the German steel industry in 2006 and in the chemical and pharmaceutical industry in 2008. These contracts are seen as prime examples of a new way of regulating working and learning conditions in the context of demographic change.

In retailing the situation is different in certain respects: the retailing market is basically domestic and probably the most competitive market in the world. Most (around 60%) of the 2.83 million employees are female, half of them working on a part-time employment contract (in the food segment 61%) (Warich, 2010). Despite the fact that retailing is dominated by just a dozen or so big corporations (e.g. Metro Group; Rewe Group; Aldi; Schwarz Group) and registered cooperatives (e.g. Edeka Group)<sup>(54)</sup>, each with more than

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<sup>(53)</sup> Per capita sales increased from EUR 169 million in 1990 to EUR 412 million in 2010 (VCI, 2011, p. 51).

<sup>(54)</sup> Today, 70% of total sales in food retailing (the biggest branch) are concentrated in only five of these big players (Warich, 2010).

100 000 people on their payroll, an average individual establishment employs only seven people (Destatis, 2010). The discount segment (Aldi, Schwarz and Lidl) has significantly gained market share in the last 20 years, and today generates 40% of total sales (Warich, 2010). Conversely, the independent quality retail segment (smaller shops with a differentiated product range) and traditional department stores are on the retreat. Stiff competition, capital concentration and expansion by the big players, deregulation of opening hours and new technologies have significantly changed the organisation of work and employment and working conditions in this industry. Industrial relations in retailing are characterised by relatively weak corporate actors on both sides: membership of the employers' federation HDE <sup>(55)</sup> is low in comparison with the other two sectors, and union membership density among employees is around 10%. As a consequence, the impact of collective bargaining agreements is limited at present: general agreements regulating income and working conditions cover only 36% of establishments, and 51% of employees in western Germany, respectively (only 14% of firms and 28% of employees in the east; Ellguth and Kohaut, 2011, pp. 243-244).

Comparing the age structures of the labour force in these three industries (Figure 7.1) significant differences become apparent:

- (a) the age structures in the two industrial sectors show a below-average proportion of younger employees (15-30 years) and above-average proportions of older employees (40+);
- (b) in stark contrast, in retailing younger cohorts are much larger and older cohorts much smaller in comparison;
- (c) the proportion of employees older than 60 is below 4% in all three sectors.

However, the demographic ageing of a company, or an industry, would not be problematic as such – either from an individual or a corporate perspective – if working and learning conditions provided sufficient resources: from the employee's point of view, maintaining employability until retirement; from the corporate point of view, preserving and developing the knowledge and innovation base. However, in all three industries these resources are not adequately provided. According to the DGB-Index *gute Arbeit* (2009) the physical working conditions in typical industry jobs have to be classified as 'bad work' and for retailing jobs the classification is not much better <sup>(56)</sup>. High

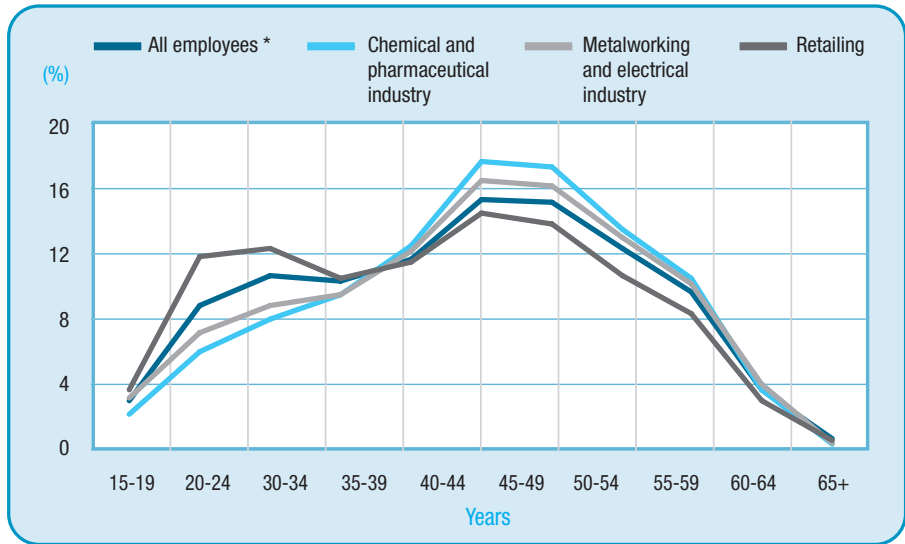
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<sup>(55)</sup> *Hauptverband des Deutschen Einzelhandels [German Retail Federation]*.

<sup>(56)</sup> According to this survey the physical exposure index for metal workers is 37 points, for machinists 41 points, for automobile workers 46 points, for chemical workers 50 points; up to 50 points such working conditions are characterised as bad work according to the DGB-Index *gute Arbeit* (2009).



Figure 7.1. **Age structures in selected industries, 2009**



(\*) With social insurance.

Source: Federal Employment Agency (2010, reference date: 30.6.2009).

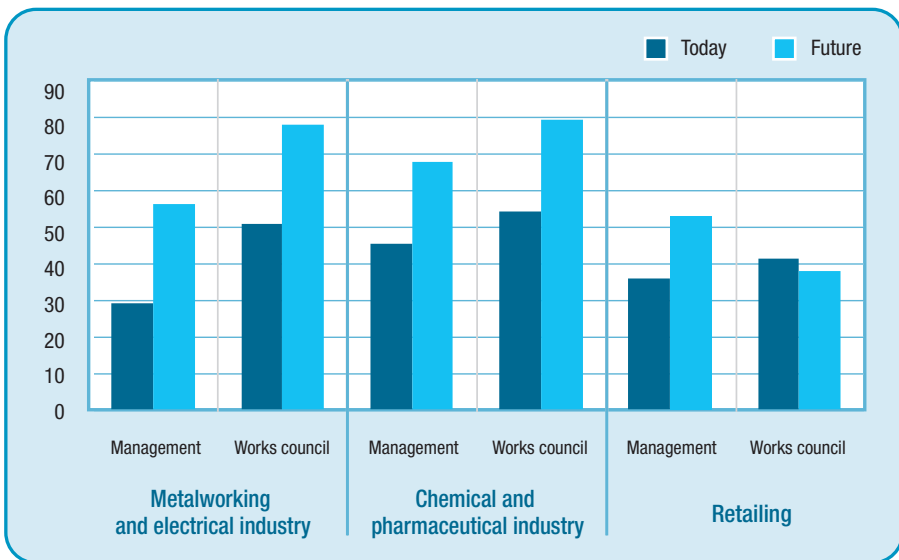
physical and mental exposure – which accumulates significantly in older cohorts – is documented in a BIBB/BAuA survey (BIBB and BAuA, 2006) and also in the government report *Safety and well-being at work 2009* produced by the Federal Ministry of Labour (BMAS and BAuA, 2011). Recent data from the German statutory pension insurance scheme (Deutsche Rentenversicherung Bund) also point to high physical and mental stress in all three industries, indicated by relatively high numbers of people taking early retirement because of reduced earning capacity (*Erwerbsminderung*)<sup>(57)</sup>.

In the context of ongoing technological and organisational change and – however differentiated in nature – an increase of knowledge and work requirements in all three industries, and against the background of the abovementioned insufficient learning and working conditions, the demographic ageing of their workforces will put increasing pressure on companies. However, our own survey data (Freidank et al., 2011) show that only few companies perceive noticeable demographic effects today, but that this

<sup>(57)</sup> For sales persons the figure is 21%, for chemical workers 18.8%, for welders 23%, for automobile mechanics 21.8%, for plastic processors 25.5%, and for metal workers 17.3% (DRV Bund, 2011).

assessment changes considerably looking to the future (Figure 7.2). Figure 7.2 also reveals differences in the assessment between the industries and between the two actor groups, albeit anticipated differences. With regard to industry differences: whereas in the chemical industry demographic effects are felt to be the most pronounced – today and in the future – in retailing such effects are not widely experienced or expected. If we look at the specific problems that managers and works councils associate with demographic change, in the chemical industry health issues (physical and mental) are viewed as most important, along with an expected lack of skilled labour and loss of know-how. In metalworking the issue of a shortage of skilled labour/loss of know-how dominates the perceptions of the respondents. In retailing both aspects play a less important role, although a shortage of new young employees does play a role in some sectors.

**Figure 7.2. Impact of demographic change from the perspective of managers and works councils, respectively – today and in the future; figures in % of establishments**



NB Under the heading ‘How severely is your establishment affected by demographic change?’ the respondents commented on two statements: ‘demographic changes are noticeable already today’ and ‘demographic changes will be noticeable in the future’ on a 5-point Likert scale. Figure 7.2 shows the combined figures for ‘strongly agree’ and ‘agree’ for managers and works councillors, respectively.

Source: Own survey 2009/10 (Freidank et al., 2011).

With regard to the perspectives of the different actors: works councils report much more pronounced demographic effects on their establishments than management (except in retailing). They also emphasise issues of physical and mental stress much more strongly than managers. This difference in actor perspective affects almost all dimensions in our survey; it can be further illustrated by taking a look at internal labour market problems with respect to the older employees (Table 7.3).

Table 7.3. **Top three ranking problems of older employees (50+) by industry and actor group**

	Management	Works councils
<b>Chemical and pharmaceutical industry</b>		
1	High training requirements	Mental stress
2	Low training participation	Physical stress
3	Lack of development options	High training requirements
<b>Metalworking and electrical industry</b>		
1	Low training participation	Mental stress
2	Low training affinity	Lack of development options
3	Lack of development options	Low training affinity
<b>Retailing</b>		
1	Lack of development options	Physical stress
2	Physical stress	Lack of development options
3	High training requirements	Mental stress

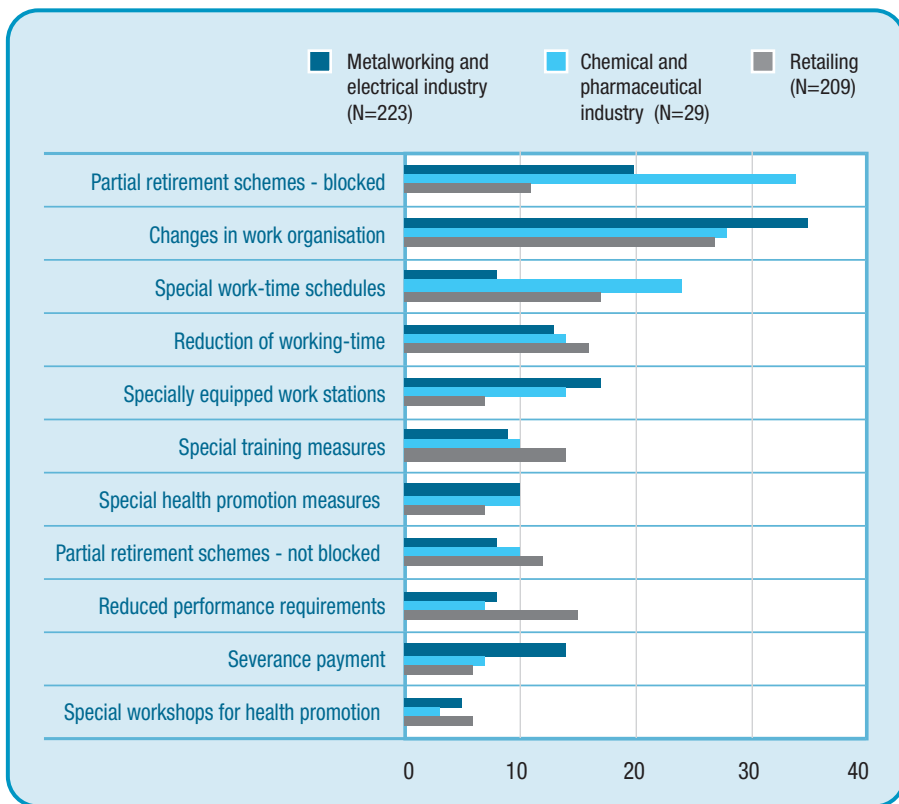
Source: Own survey 2009/10 (Freidank et al., 2011).

Such different perceptions of the same subject-matter may be rooted in different institutional roles within the firms, setting different priorities for each party. With regard to the relevance of mental stress – an issue that is ranked very highly by the works councils, but plays no role in the perceptions of management – it can be assumed that employees are more likely to report such stress to their workers' representatives than to the personnel department.

## 7.4. Insufficient dissemination of age-oriented working and learning programmes

Regarding the dissemination of corporate programmes that could (and should) be implemented to preserve or enhance the employability of ageing workforces and the innovativeness and competitiveness of companies, our survey data show that the efforts being made are still insufficient. This is particularly the case with regard to programmes or policies that address the specific needs of older (50+) employees (Figure 7.3).

Figure 7.3. **Dissemination of age-oriented programmes or measures for older employees (50+); frequencies (establishments in %; manager sample)**



Source: Own survey 2009/10 (Freidank et al., 2011).

The figures underline earlier findings indicating an almost complete neglect of that age group in the field of corporate human resources and work organisation policies (Bellmann et al., 2003; 2007). Overall, the most frequently implemented measures are changes in work organisation to reduce physical and mental stress for older employees, such as job rotation. However, they can be found in no more than 35% of establishments. And again, differences between the sectors become apparent, most prominently in the case of partial retirement schemes and working time. Because partial retirement schemes play a major role in collective bargaining agreements in the chemical industry (see below), this measure is the most common in that industry <sup>(58)</sup>; the same applies to a reduction of working time, especially for shift workers. The same is true, although on a much lower level, for severance pay in the metalworking industries. Overall, special training measures for older workers again play only a negligible role (between 8% in the metalworking and electrical industry and 13% in retailing). These figures are significantly higher than average according to the IAB Establishment Panel (Bellmann and Leber, 2011), but also higher than the sector-specific figures of the CVTS3 additional survey by the Federal Institute for Vocational Education and Training (BIBB) <sup>(59)</sup>.

If we look at measures that could improve working and learning conditions for all employees – irrespective of age group – the picture is less bleak (Figure 7.4). Formalised and non-formal learning arrangements are the measures most frequently offered by companies, although our data give no information on how many and what kind of employees actually participate in these measures <sup>(60)</sup>. In addition, working time schemes that allow a balancing of accumulated work stress, as well as work groups composed of different age groups are found in every second establishment. However, many

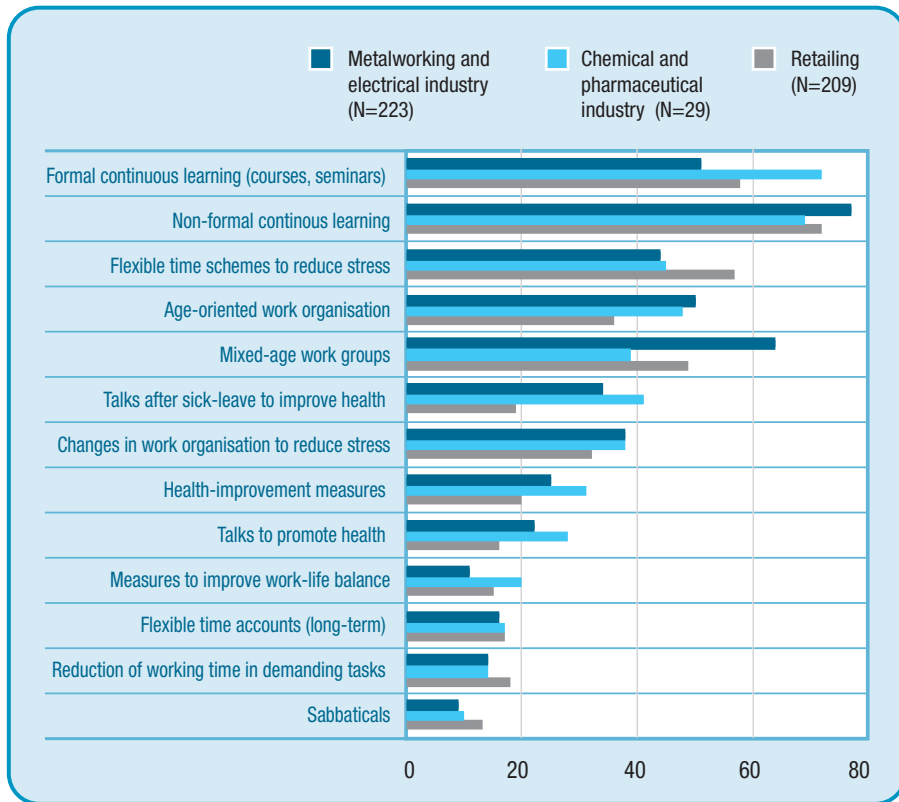
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<sup>(58)</sup> Partial retirement schemes here do not seek to keep employees longer in the company, but quite the opposite. The same holds true for severance payments.

<sup>(59)</sup> According to the IAB Establishment Panel, only 1% of all establishments in Germany (west and east alike) offered special training measures for older (50+) employees in 2002, 2006 and 2008 respectively (Bellmann and Leber, 2011, p. 171), much lower than our results. However, according to the CVTS3 additional survey data produced by BIBB in 2008, 6.5% of all chemical firms, and 3% of all firms in the metalworking and electrical industry, but 0% (sic!) in retailing, offered special training for older employees (BIBB, 2009). Specifically with regard to retailing, our sample might consist of exceptionally learning-oriented companies.

<sup>(60)</sup> The latest AES Trend for 2010 shows that the average participation rate of non-skilled or semi-skilled employees in job-related training measures is 33%, the rate for skilled employees is 54% and the rate for executives is 70% (BMBF, 2011, p. 26).

Figure 7.4. **Dissemination of age-oriented programmes or measures for all employees; frequencies (establishments in %; manager sample)**



Source: Own survey 2009/10 (Freidank et al., 2011).

programmes or measures that can have a positive impact on employability as well as the sustainability of a firm’s competence base still play only a limited role in most firms: this applies to work organisation measures and health improvement programmes – both are disseminated in less than one third of establishments. What is somewhat surprising is the marginal proliferation of measures to improve work-life balance – particularly in retailing where this issue has relevance because of the deregulation of working time in the last few years, which has put strain on female employees in particular (child and family home care).

To briefly sum up these findings: German companies in the three industries studied basically have no activities addressing the particular needs of older employees with a view to improving working and learning conditions. Although our data show some increases with regard to certain aspects, for example further training specifically addressing 50+, by and large, the companies still do very little. With regard to measures and policies that have the potential to improve working and learning conditions throughout the working life, there are at least some aspects into which a policy change towards better working and learning environments in Germany could connect.

## 7.5. Constraining and enabling factors

Why do companies – by and large – not do more to improve learning and working conditions against the background of demographic and socio-economic changes? Three explanations – partly interrelated – seem to be most compelling. Enabling factors will be discussed later.

## 7.6. Three possible explanations for the gap

One explanation has already been given implicitly; it has to do with difference and context: not every establishment in every sector of the economy is – or considers itself – really affected by demographic effects. Our data underline the need to discuss these issues at least according to sectoral (and professional labour market) differences. In addition, regional disparities [for Germany: east versus west; rural versus metropolitan regions] have to be considered. As we have seen, companies in the chemical and pharmaceutical industry perceive the most noticeable demographic effects, whereas in retailing perceptions are less distinct. That has to do with the objective age structures in each case, with the chemical industry having the oldest labour force and retailing the youngest. Our survey data indicate a significant correlation between the degree to which companies perceive themselves to be affected by demographic changes (lack of personnel, falling performance) and the degree to which they have implemented human resources measures (or are planning to implement measures).

Our empirical findings also reveal that only a few companies in these three industries systematically gather or use information that might be helpful in evaluating whether a company already has problems with the age and/or

qualification structure of employees – or might have such problems in the future. Again, there are significant differences regarding the dissemination of instruments between industries: whereas roughly every second company in the chemical and pharmaceutical industry conducts analyses of age structures and the qualifications available to perform corporate tasks, the figures are much lower in the other two industries, particularly in retailing.

Table 7.4. **Use of information tools; in % of establishments (manager sample)**

▼ Instrument	Sectors ►	Metalworking and electrical industry (N=224)	Chemical and pharmaceutical industry (N=29)	Retailing (N=210)
Analysis of age structure		24	46	7
Analysis of qualification structure and demand		43	54	28
Work ability index		8	14	7
Mandatory risk assessment for work places		74	76	44

Source: Own survey 2009/10 (Freidank et al., 2011).

Less than half of the establishments in retailing (and only three out of four in the other two sectors) use or conduct risk assessments of workplaces. This is striking insofar as German occupational health and safety law requires each establishment to conduct and document risk assessments in the workplace, that not only cover workplace hazards due to environmental or technical dangers, but also those that might result from lack of qualifications (Arbeitsschutzgesetz, 2009, paragraphs 5-6). However, the low numbers in retailing in particular illustrate that legal regulations per se do not lead to appropriate actions, but that employers have to be forced to comply with the law. In Germany, works councils play an important role as enforcers: our correlation analysis shows that use of all of the abovementioned instruments, except the work ability index, is significantly more likely in establishments with works councils than in those without. Since employee representation in retailing is traditionally weak, so is the dissemination of such instruments, and vice versa regarding metalworking and chemicals.



Another (frequently used) explanation is economic in nature. According to arguments based on rational choice or human capital approaches (Becker, 1999), investments in substantive and sustainable labour policies (e.g. investments in learning, ergonomics, health and safety, work organisation) are made only when there are economic returns to be assumed. In demographic change those investments need to be made now, although possible returns (e.g. lower number of sick days, better performance) might only materialise sometime in the future. Our case study interviews indeed indicate that as long as performance and competitiveness are not really threatened (or perceived to be), corporate management has little or no incentive really to change labour policies. And as long as works councils (if they exist at all) and unions are on the retreat and not powerful enough to push issues of 'good work' in firms, the major actor to combat microeconomic reasoning is thwarted. The economic crisis in 2008/09 undoubtedly further delegitimised attempts (not only from works councils but also from some parts of corporate management, particularly in human resources) to address the consequences of demographic change. According to our survey, most companies in the metalworking and electrical industry and in retailing which were at least to some degree adversely affected by the economic downturn (70% in the metalworking and electrical industry, and 47% in retailing, respectively) stated that the demographic challenge is no longer important, but that other issues have priority. For works councils too the avoidance of lay-offs or plant closures, or the implementation of short-time work, gained immediate importance over long-term strategic issues like demographic change.

In addition to microeconomic and legitimacy barriers, there is also a complexity problem: advanced, comprehensive approaches that deal with demographic problems and possible solutions at corporate level are rather complex in nature. This is because substantive age management needs to address issues in different – very often politically controversial – areas: human resources (training, recruitment, professional development), work organisation and work performance, working time (e.g. shift work, work-life balance), remuneration, as well as leadership issues (corporate culture). This complexity places excessive demands (knowledge, finance, time) on the main corporate actors, both in the human resources department and in the works council. Small and medium-sized enterprises in particular are often overburdened by such comprehensive approaches.

A third major barrier to establishing age-oriented learning and working environments could be an institutional one. Institutionalised rules and normative frameworks represent legitimacy and significantly influence

individual and collective behaviour. In Germany (as in other European countries), the way corporations and individuals deal with issues of age and ageing in the employment relationship is embedded in a system of institutionalised rules on three societal levels: on the State or macro level there are legislative regulations governing the transition from employment to retirement (retirement age, early retirement regulations, etc.). On the meso level of industrial relations there are collective bargaining agreements that often refine federal law for an industry or a sector of the economy (e.g. early retirement schemes, employment protection for older workers). Finally, on the micro level of the firm or establishment there are further agreements (employment contract or company agreement). Those institutions and their contents were and are the object of sometimes contested bargaining processes on all three levels. For the situation in (west) Germany, a major turning point in the handling of ageing employees was the institutionalisation of early retirement as a new policy in the first half of the 1980s – for federal labour market policies, for corporate human resources policies, but also for the expectations and prospects of the individual worker. There were several reasons why this new policy gained and maintained importance:

- (a) the sociopolitically cushioned transition into early retirement was a prime instrument used by German governments to deal with labour market problems in times of slowing growth rates, corporate downsizing and outsourcing. For employers and for works councils, early retirement had the advantage of avoiding conflicts within firms. Capital also appreciated the externalisation, or socialisation, of the costs of this mechanism;
- (b) for corporations, early retirement offered some leeway for corporate personnel strategies, particularly in those industries where the dynamic of restructuring and modernisation required an upgrading of the competences of the labour force, such as the chemical industry. Such an upgrading is much easier if less qualified older workers make way for better qualified younger employees;
- (c) finally, early retirement also appealed to employees because the reductions in income/pensions were – due to subsidies – rather limited, whereas in many industrial jobs health problems were already manifest or very predictable.

On the collective bargaining level, the contracting of the modes of early retirement became an important part of general agreements. Within firms, the move towards early retirement gave little or no incentive at all to enhance the competences of those beyond the age of 50, or to invest in better working conditions (as long as the labour supply was secured). In addition, many older

workers themselves had little incentive actively to improve their employability (or less generally speaking their know-how and competences). In general, the German institutional regulatory regime has provided various incentives for both employers and employees to seek retirement as early as possible.

### 7.7. Closing the gap with new collective agreements?

During the last decade, however, the different German governments have closed down some of the institutionalised pathways into early retirement: the transition of older unemployed workers into early retirement has basically been blocked and State subsidies for partial early retirement schemes (*Altersteilzeit*) have been terminated from the end of 2009. In addition, the compulsory retirement age will gradually increase to 67 years (instead of 65) by 2029. While the unions, particularly the metalworkers union (IG Metall) and the public sector union Ver.di, fiercely – but unsuccessfully – opposed the shift in the retirement age, they also came up with new collective agreements that attempted to tackle the issue of improved learning and working environments in the context of demographic change.

Historically there have been some attempts by German unions to address issues of working conditions and continuing vocational training in collective bargaining agreements<sup>(61)</sup>. Yet, employers in particular traditionally oppose regulations that might give works councils greater influence over personnel or work and learning-related issues at corporate level. But also within the unions and their membership, so-called quantitative (and quantifiable) aspects of the employment relationship (particularly income redistribution) were considered more important than ‘qualitative’ issues such as training issues. As a result, the effects and the lasting impact of these agreements were – by and large – rather limited (Bahnmüller, 1999).

However, in the first half of the last decade, unions and employers’ associations in some industries concluded new collective agreements dealing with on-the-job training. Without going into too much detail here, according to recent empirical evidence (Bahnmüller et al., 2006) and comments from union and employers’ representatives in the course of our own research, there have

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<sup>(61)</sup> Most notably in the 1970s and 1980s in the metalworking industry of northern Württemberg, and in some general or firm-specific agreements in the 1980s and 1990s that dealt with training issues in relation to technical and organisational change (Bahnmüller, 1999).

been a number of positive effects of these contracts. Most notably, they brought issues of on-the-job learning and training back on the corporate agenda. Particularly in firms that were not very active in continuing training previously, these agreements constituted a decisive impulse for both works councils and human resources departments to start to deal with that crucial issue (Bahnmüller and Fischbach, 2006). Yet, particularly with regard to better integration of disadvantaged workers (unqualified or less qualified, older employees, female part-time workers), the impact of the contracts seems to be limited. One major reason is that the agreements most frequently consist of only structural and procedural rules: they deal with procedures, for example, to determine demand and to develop training plans; they also regulate participation by works councils and how financial burdens are shared between employer and employees. But they neither establish an individual entitlement to receive training nor put more pressure on employers to improve the crucial work-learning nexus, i.e. to integrate better learning into daily work processes. Nevertheless, collective agreements are an important framework for the regulation of working and learning conditions.

Two recent general agreements may play a pivotal role in paving the way for institutionalising the issue of learning and working conditions in a new manner. In 2006 and in 2008 the ‘social partners’ in the German steel industry and in the chemical industry, respectively, agreed on contracts that address the issue of improving working and learning conditions fairly comprehensively. Since both contracts are basically identical, we will focus on the agreement in the chemical industry (BAVC and IGBCE, 2008) <sup>(62)</sup>. This agreement – covering around 90% of all employees in the German chemical industry – requires an analysis of the demographic and qualification structures of the companies. Corporate management and workers’ representatives are also obliged to discuss the results and the consequences of that analysis. The agreement also gives recommendations regarding five specific areas or subjects the corporate actors should address: ergonomics, working time, work-life balance, qualification and health issues. So far, statements from the trade union and the employers’ association and empirical evidence indicate that this mandatory age analysis has had a decisive impact on the companies (Freidank et al., 2011; Latniak et al., 2010). Such age analyses are much more common in the chemical industry than in the other two industries in our sample. In many – even large – companies it was certainly not a matter of course to conduct such

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<sup>(62)</sup> For an evaluation of the agreement in the German steel industry see Katenkamp et al. (2011).

analyses or to make projections about the interrelation between demographic ageing and qualification requirements. As such, by simply looking at age structures and projections, for many companies the issue of demographic change started to become an important issue to deal with.

Another obligatory part of the agreement is the accumulation of a demography fund in which EUR 300 has to be paid for each employee per year. Here, the fund is strictly limited to five possible uses, all of them outside of the abovementioned areas or subjects. Without going into too much detail here, the fund can be used to finance partial retirement schemes for older workers (Schack and Volkwein, 2010). However, the economic crisis in the chemical industry in 2009 initially slowed down the implementation of the contract and produced other priorities. While the obligatory rules had to be implemented, it still remains an open question if and to what extent the companies will implement the recommendations on working and learning conditions.

The new general agreement in the chemical industry provides a useful framework and methodology for corporate actors to negotiate the steps towards a more age-oriented corporate policy. A key aspect is the mandatory analysis of a firm's age structure, which is a central means of addressing the issue within companies and of raising awareness. However, as mentioned above, previous experience with collective agreements on continuous further training indicates that such 'soft' regulations require knowledgeable and powerful corporate actors on both sides, specifically in the works councils.

External assistance, e.g. from their respective federations, is also of utmost importance to overcome resource deficiencies, particularly in the case of SMEs. In industries and corporations where industrial relations are not well developed (i.e. where trade union density and employee representation is low and works councils are weak), as in retailing, it is unlikely that comparable agreements will come into place.

## 7.8. Conclusion

Better learning and working conditions for older employees are still a long way off in German corporations, although in the three industries presented here, more specific training measures for the 50+ age cohort are offered than on average. Similarly, in areas like health improvement, ergonomics and work-life balance, the needs of older employees are not adequately addressed by corporate human resources policies. There are some hints that companies

are becoming more aware that sustainable changes in the organisation of work and working time are needed, but there is still a huge gap between a publicly claimed need to reorganise work and learning and the actual situation on shop floors, in offices and in supermarkets. This gap is basically the result of corporate strategies of labour use in finance-driven capitalism. Perhaps Reindl (2009) is right to state that in today's short-term-oriented, finance and shareholder-value-driven capitalism, any attempts to implement sustainable work policies and practices look like a 'carried-off utopia'. As long as sustainable human resources management remains a lower-ranking function and the influence and power of employees and their unions remain limited, any real improvements in learning and working conditions will be sparse. Yet, there is also a legacy of an institutional regime that puts more emphasis on early retirement than on improving working and learning conditions. To convince workers to bid farewell to the biographical norm of early retirement – and continuously to invest in their employability – is a difficult task. However, by terminating legal and regulatory rules on early retirement without providing a new framework and new incentives – and without making real changes in the working and learning environment in the companies – the widespread plea for lifelong learning will most likely remain unheard. Collective agreements that seek to integrate the demographic challenges with issues of improving learning and working environments, working time and work-life balance are an important step in the right direction.

## References

- Adecco Institute (2009). *Die Demografische Fitness Umfrage 2008. Demografische Fitness deutscher Unternehmen in Zeiten der Krise [The demographic fitness survey 2008: Demographic fitness of German companies in times of crisis]*. London: Adecco Institute. Research paper.
- Arbeitsschutzgesetz [Safety at work Act] (2009 [1996]). *Gesetz über die Durchführung von Maßnahmen des Arbeitsschutzes zur Verbesserung der Sicherheit und des Gesundheitsschutzes der Beschäftigten bei der Arbeit. [Act on the implementation of safety and health measures to improve safety and health of employees at work]*.  
<http://www.gesetze-im-internet.de/bundesrecht/arbschg/gesamt.pdf>  
 [accessed 16.10.2012].
- Baethge, M.; Baethge-Kinsky, V. (2004). Der ungleiche Kampf um das lebenslange Lernen: eine Repräsentativ-Studie zum Lernbewusstsein

- und -verhalten der deutschen Bevölkerung [The unequal struggle for lifelong learning: A representative study of learning awareness and behaviour of the German population]. In: Arbeitsgemeinschaft Betriebliche Weiterbildungsforschung (ed.). *Edition QUEM, Studien zur beruflichen Weiterbildung im Transformationsprozess [QUEM edition, Studies on vocational training in the transformation process]*. Münster, Vol. 16.
- Baethge-Kinsky, V. et al. (2006). *Dynamische Zeiten: langsamer Wandel: Betriebliche Kompetenzentwicklung von Fachkräften in zentralen Tätigkeitsfeldern der deutschen Wirtschaft. Endbericht. [Dynamic times: Slow change: Professional skills development in enterprises in key areas of activity of the German economy]*. Göttingen: SOFI, Soziologisches Forschungsinstitut. [http://www.sofi.uni-goettingen.de/fileadmin/Knut\\_Tullius/Material/SOFI-Endbericht.pdf](http://www.sofi.uni-goettingen.de/fileadmin/Knut_Tullius/Material/SOFI-Endbericht.pdf) [accessed 16.10.2012].
- Bahn Müller, R. (1999). Weiterbildung durch Tarifvertrag: ein Beispiel aus Baden-Württemberg [Training by collective agreement: An example of Baden-Württemberg]. In: Arbeitsgemeinschaft Qualifikations-Entwicklungs-Management (ed.). *Kompetenzentwicklung '99: Aspekte einer neuen Lernkultur [Competence development 99: Aspects of a new culture of learning]*. Berlin: Waxmann Verlag, pp. 401-430.
- Bahn Müller, R.; Fischbach, S. (2006). *Qualifizierung und Tarifvertrag. Befunde aus der Metallindustrie Baden-Württembergs [Training and collective bargaining: Findings from the metal industry in Baden-Württemberg]*. Hamburg: VSA-Verlag.
- Bahn Müller, R. et al. (2006). Was nützen und bewirken Qualifizierungstarifverträge? [What is the benefit and effect of qualification collective agreements?]. *WSI Mitteilungen*, Vol. 59, No 2, pp. 71-78.
- BAVC (2007). *Trend zu höher qualifizierten Arbeitsplätzen [Trend towards more highly skilled jobs]*. Wiesbaden: BAVC – Bundesarbeitgeberverband Chemie. Informationsbrief, No 8/2007.
- BAVC; IGBCE (2008). *Tarifvertrag Lebensarbeitszeit und Demografie für die chemische Industrie in Deutschland mit Erläuterungen [Collective agreement on working life and demographics for the chemical industry in Germany with explanations]*. Wiesbaden: BAVC – Bundesarbeitgeberverband Chemie; IGBCE – IG Bergbau, Chemie, Energie. [www.nordostchemie.de/fileadmin/user\\_upload/downloads/Demografie/Erlaeuterungen\\_TV\\_Demo\\_27-09-2008.pdf](http://www.nordostchemie.de/fileadmin/user_upload/downloads/Demografie/Erlaeuterungen_TV_Demo_27-09-2008.pdf) [accessed 16.10.2012].
- Becker, G.S. (1999). *The economic approach to human behaviour*. Chicago: University of Chicago Press.

- Bellmann, L. et al. (2003). Herausforderungen des demografischen Wandels für den Arbeitsmarkt und die Betriebe. [Challenges of demographic change for the labour market and companies]. *Mitteilungen aus der Arbeitsmarkt- und Berufsforschung [Releases from the labour market and occupational research]*, Vol. 36, No 2, pp. 133-149. [http://doku.iab.de/mittab/2003/2003\\_2\\_MittAB\\_Bellmann.pdf](http://doku.iab.de/mittab/2003/2003_2_MittAB_Bellmann.pdf) [accessed 16.10.2012].
- Bellmann, L. et al. (2007). Demographischer Wandel: Betriebe müssen sich auf alternde Belegschaften einstellen. [Demographic change: Companies have to adapt to an ageing workforce]. *IAB Kurzbericht*, Vol. 21. <http://doku.iab.de/kurzber/2007/kb2107.pdf> [accessed 16.10.2012].
- Bellmann, L.; Leber, U. (2011). Betriebliche Weiterbildung Älterer als Strategie zur Sicherung des Fachkräftebedarfs. [Further training for older employees as a response to skilled labour shortages]. *Sozialer Fortschritt* Vol. 60, No 8, pp. 168-175. <http://dx.doi.org/10.3790/sfo.60.8.168> [accessed 16.10.2012].
- BIBB; BAuA (2006). *BIBB/BAuA-Erwerbstätigenbefragung 2006: Arbeit und Beruf im Wandel, Erwerb und Verwertung beruflicher Qualifikationen [BIBB/BAuA employee survey 2006: Work in transition, acquisition and use of vocational qualifications]*. Bonn: BIBB – Bundesinstitut für Berufsbildung; BAuA – Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- BMAS; BAuA (2011). *Sicherheit und Gesundheit bei der Arbeit 2009. Unfallverhütungsbericht Arbeit [Safety and wellbeing at work 2009: Accident prevention work report]*. Berlin: BMAS – Bundesministerium für Arbeit und Soziales; BAuA – Bundesanstalt für Arbeitsschutz und Arbeitsmedizin. [http://www.baua.de/de/Publikationen/Fachbeitraege/Suga-2009.pdf;jsessionid=EF9B4E9A292AABB8DC04F956008297F3.1\\_cid246?\\_\\_blob=publicationFile&v=12](http://www.baua.de/de/Publikationen/Fachbeitraege/Suga-2009.pdf;jsessionid=EF9B4E9A292AABB8DC04F956008297F3.1_cid246?__blob=publicationFile&v=12) [accessed 16.10.2012].
- BMBF (2011). *Weiterbildungsverhalten in Deutschland: AES 2010 Trendbericht [Training behaviour in Germany: AES 2010 trend report]*. Bonn: BMBF – Bundesministerium für Bildung und Forschung. [http://www.bmbf.de/pub/trendbericht\\_weiterbildungsverhalten\\_in\\_deutschland.pdf](http://www.bmbf.de/pub/trendbericht_weiterbildungsverhalten_in_deutschland.pdf) [accessed 16.10.2012].
- Briken, K. (2004). *Perspektiven für Arbeit in der Chemischen Industrie [Prospects for employment in the chemical industry]*. Göttingen. (Dissertation).
- Brussig, M. (2011). *Neueinstellungen im Alter: tragen sie zu verlaengerten Erwerbsbiografien bei? [New recruitment in old age: Does it contribute to*



- extended careers?*] Duisburg: IAQ/HBS. Altersuebergangsreport, No 2011-03. <http://www.iaq.uni-due.de/auem-report/2011/2011-03/auem2011-03.pdf> [accessed 16.10.2012].
- Destatis (2010). *Jahresstatistik Einzelhandel (WZ 52) [Annual statistics for retail (WZ 52)]*. Wiesbaden: Destatis – German Federal Statistical Office.
- Destatis (2011). *Bevölkerung und Erwerbstätigkeit: Ergebnisse des Mikrozensus 2010: Fachserie 1 Reihe 2.2 [Population and employment: Results of the 2010 microcensus]*. Wiesbaden: Destatis – German Federal Statistical Office.
- DGB-Index Gute Arbeit GmbH (2009). *Datenbestand der Repräsentativerhebung 2009 [Data of the representative survey sample 2009]*. Berlin: DGB-Index Gute Arbeit GmbH.
- DRV Bund (2011). *Rentenzugänge 2010; Renten nach SGB IV insgesamt; Tabelle 012.00 Z Verteilung nach Rentenarten sowie nach Berufen (Tätigkeitsschlüssel) des Versicherten vor Rentenbeginn. Datenabfrage. [Retirements in 2010, retirement pensions under SGB IV, Table 012.00 Z distribution by type of pension and by occupation (activity code) of the insured person before retirement. Data retrieval]*. Berlin: DRV Bund – Deutsche Rentenversicherung Bund.
- Ellguth, P.; Kohaut, S. (2011). Tarifbindung und betriebliche Interessenvertretung: aktuelle Ergebnisse aus dem IAB-Betriebspanel 2010. [Tariff commitments and in-house representation of interests: Current findings from the IAB Establishment Panel 2010]. *WSI Mitteilungen*, Vol. 64, No 5, pp. 242-247.
- Federal Employment Agency (2010). *Arbeitsmarkt in Zahlen: Beschäftigungsstatistik. Sozialversicherungspflichtig Beschäftigte nach ausgew. Wirtschaftszweigen (WZ 2008) und Alter [Labour market in figures: Employment statistics: persons subject to social insurance contributions, selected by economic activities (NACE 2008), and age]*. Nürnberg: Statistik Datenzentrum.
- Freidank, J. et al. (2011). *Altersdifferenzierte und altersgerechte Betriebs- und Tarifpolitik: eine Bestandsaufnahme betriebspolitischer und tarifvertraglicher Maßnahmen zur Sicherung der Beschäftigungsfähigkeit [Age-differentiated and age-appropriate company policy and collective bargaining policy: An inventory of measures to ensure employability]*. Dortmund: INQA – Initiative Neue Qualität der Arbeit. INQA report, No 42. <http://www.sofi-goettingen.de/index.php?id=983> [accessed 16.10.2012].
- Gesamtmittel (2010). *Die Metall- und Elektro-Industrie in der Bundesrepublik Deutschland in Zahlen, Ausgabe 2010 [The metal and*

- electrical industry in the Federal Republic of Germany in figures, 2010 edition*]. Berlin: Gesamtmetall. [http://www.gesamtmetall.de/gesamtmetall/meonline.nsf/id/DE\\_Zeitreihen/\\$file/Zahlenheft2010.pdf](http://www.gesamtmetall.de/gesamtmetall/meonline.nsf/id/DE_Zeitreihen/$file/Zahlenheft2010.pdf) [accessed 16.10.2012].
- HBS (2009). *Demografie im Wandel: Impulse für eine altersgerechte Erwerbsarbeit* [Changing demographics: impulses for age-appropriate employment]. Düsseldorf: HBS – Hans Böckler Stiftung. [www.boeckler.de/pdf/p\\_demografie\\_wandel.pdf](http://www.boeckler.de/pdf/p_demografie_wandel.pdf) [accessed 16.10.2012].
- INQA (2005). *Demographischer Wandel und Beschäftigung: Plädoyer für neue Unternehmensstrategien (Memorandum, 2. akt. Aufl.)* [Demographic change and employment: A plea for new business strategies (Memorandum, 2nd updated edition)]. Dortmund: INQA – Initiative neue Qualität der Arbeit.
- Jacobi, O. et al. (1998). Germany: facing new challenges. In: Ferner, A.; Hyman, R. (eds). *Changing industrial relations in Europe (2nd edition)* Oxford: Wiley-Blackwell, pp. 190-238.
- Katenkamp, O. et al. (2011). *Evaluation des Tarifvertrags 'Demografischer Wandel' in der Eisen- und Stahlindustrie* [Evaluation of the collective agreement on 'demographic change' in the iron and steel industry]. Dortmund. (Unpublished report).
- Kistler, E. (2008). *Altersgerechte Erwerbsarbeit: ein Überblick über den Stand von Wissenschaft und Praxis* [Ageing-friendly employment: An overview of the progress of theory and practice]. Düsseldorf: Hans Böckler Stiftung. Böckler Forschungsmonitoring, No 7. [http://www.mature-project.eu/materials/p\\_fomo\\_hbs\\_07.pdf](http://www.mature-project.eu/materials/p_fomo_hbs_07.pdf) [accessed 16.10.2012].
- Kocka, J.; Staudinger, U. (2009). *Gewonnene Jahre: Empfehlungen der Akademiengruppe Altern in Deutschland* [Gained years: Recommendations of the Academy Group on Ageing in Germany]. Stuttgart: Wissenschaftliche Verlagsgesellschaft. Nova Acta Leopoldina N.F., Vol. 107, No 371.
- Latniak, E. et al. (2010). *Umsetzung demografiefester Personalpolitik in der Chemischen Industrie: Inhaltliche und prozessuale Analyse betrieblicher Vorgehensweisen: Abschlussbericht* [Implementation of demographically sound personnel policies in the chemical industry: Content and process analysis of operational procedures in enterprises: Final report]. Düsseldorf: Hans-Böckler-Stiftung. [http://www.boeckler.de/pdf\\_fof/S-2008-110-3-1.pdf](http://www.boeckler.de/pdf_fof/S-2008-110-3-1.pdf) [accessed 16.10.2012].

- Leber, U.; Möller, I. (2007). *Weiterbildungsbeteiligung ausgewählter Personengruppen [Training participation of selected groups of people]*. Berlin: RatSWD – German data forum. Research Note; No 8. [http://www.ratswd.de/download/RatSWD\\_RN\\_2007/RatSWD\\_RN\\_08.pdf](http://www.ratswd.de/download/RatSWD_RN_2007/RatSWD_RN_08.pdf) [accessed 16.10.2012].
- Matthäi, I.; Morschhäuser, M. (2009). *Länger arbeiten in gesunden Organisationen. Praxishilfe zur altersgerechten Arbeitsgestaltung in Industrie, Handel und Öffentlichem Dienst [Working longer in healthy organisations: Practical help for the design of age-appropriate work in industry, commerce and public service]*. Saarbrücken: ISO – Institut für Sozialforschung und Sozialwirtschaft.
- Moraal, D. et al. (2009). *Ein Blick hinter die Kulissen der betrieblichen Weiterbildung in Deutschland. Daten und Fakten der nationalen CVTS3-Zusatzerhebung. [A look behind the scenes of continuous vocation training in enterprises in Germany: Facts and figures from the national CVTS3 additional survey]*. Bonn: BIBB – Bundesinstitut für Berufsbildung. BiBB-Report, No 7. [http://www.bibb.de/dokumente/pdf/a12\\_bibbreport\\_2009\\_07.pdf](http://www.bibb.de/dokumente/pdf/a12_bibbreport_2009_07.pdf) [accessed 16.10.2012].
- Prognos AG (2010). *Recherche und Darstellung betrieblicher Demographieprojekte: final report [Research and presentation of projects on demography in companies: Final report]*. Berlin: BAuA – Bundesanstalt für Arbeitsschutz und Arbeitsmedizin.
- Reindl, J. (2009). Die Abschaffung des Alters: eine Kritik des optimistischen Alternsparadigmas. [The abolition of age: a critique of the optimistic ageing paradigm]. *Leviathan*, Vol. 37, pp. 160-172.
- Schack, A.; Volkwein, C. (2010). *Der Demografie-Tarifvertrag in der Hessischen Praxis [The collective agreement on demography in Hessian practice]*. Wiesbaden: HessenChemie – Institut und Arbeitgeberverband Chemie und verwandte Industrien für das Land Hessen.
- Sorge, A.; Streeck, W. (1988). Industrial relations and technical change: The case for an extended perspective. In: Hyman, R.; Streeck, W. (eds). *New technology and industrial relations*. Oxford: Basil Blackwell, pp. 19-47.
- Tippelt, R. et al. (2009). *Bildung Älterer: Herausforderungen des demografischen Wandels [Education of older people: Challenges of demographic change]*. Bielefeld: Bertelsmann.
- Tullius, K.; Kädtler, J. (2011). Demografie: Alter(n)sgerechte Arbeits- und Betriebspolitik? Problemlagen und Ansätze in drei Kernbranchen der deutschen Wirtschaft [Demography: age(ing)-appropriate labour and company policies? Problems and approaches in three key sectors of the

German economy]. *Mitteilungen aus dem SOFI, July 2011, Vol. 5, No 12*.  
 Göttingen: SOFI – Soziologisches Forschungsinstitut.  
<http://www.sofi-goettingen.de/fileadmin/SOFI-Mitteilungen/Mitt14.pdf>  
 [accessed 16.10.2012].

Unesco (2006). *International standard classification of education ISCED 1997*. Unesco-UIS. <http://www.uis.unesco.org/Library/Documents/isced97-en.pdf> [accessed 16.10.2012].

VCI (2011). *Chemiewirtschaft in Zahlen 2011 [Chemical industry in figures 2011]*. Frankfurt: VCI – Verband der Chemischen Industrie.

Warich, B. (2010). *Einzelhandel: Branchendaten [Retail: Industry data]*. Berlin: ver.di – Vereinte Dienstleistungsgewerkschaft, Fachbereich Handel, Bereich Branchenpolitik.

## List of abbreviations

<b>AES</b>	adult education survey
<b>BAuA</b>	Bundesanstalt für Arbeitsschutz und Arbeitsmedizin [Federal institute for occupational safety and health]
<b>BIBB</b>	Bundesinstitut für Berufsbildung [Federal institute for vocational education and training]
<b>BMAS</b>	Bundesministerium für Arbeit und Soziales [Federal Ministry of Labour and Social Affairs]
<b>BMBF</b>	Bundesministerium für Bildung und Forschung [Federal Ministry of Education and Research]
<b>CVTS</b>	continuing vocational training survey
<b>IAB</b>	Institut für Arbeitsmarkt- und Berufsforschung [Institute for employment research]
<b>SMEs</b>	small- and medium-sized enterprises