Lehrstuhl für Betriebswirtschaftslehre,
insbesondere Organisation, Personal- und Informationsmanagement
Univ.-Prof. Dr. Chr. Scholz

Christian Scholz / Michael J. Kavanagh

Attitudes Toward Older Workers in the USA and in Germany: Scale Development and Relationships with Organizational Variables[1]

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Universität des Saarlandes
Im Stadtwald, Gebäude 15
D-66041 Saarbrücken
Telefon (0681) 302-4120
Telefax (0681) 302-3702
E-Mail: scholz@orga.uni-sb.de
Internet: http://www.orga.uni-sb.de
&
School of Business
University at Albany, SUNY
1400 Washington Avenue
Albany, NY 12222
(518) 442-4956

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Abstract

The aging of the Western population along with the approach of "baby boomers" reaching retirement age represents a significant change in demographics that will be impacting economic and social systems. Older workers who are leaving the workforce in large numbers are taking valuable skills with them, causing a skill gap as well as a shortage of new employees. Two of the main alternatives for organizations to solve this challenge are to retain or to retrain older employees. In either case, it is argued that one of the factors that will influence success in either retaining or retraining programs is the attitude toward older workers in general, conceived as a part of the culture of an organization. This paper develops culture-bound scales for the measurement of attitudes toward older workers for the USA and for Germany. Additionally, it reports on empirical results of hypothesized relationships between this measure and other organizational variables.

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The Global Aging Workforce Phenomenon

The aging of the world's population along with the general increased life expectancy has resulted in serious problems for developed nations (Center for Strategic and International Studies, 2002; Francis, 2002; Global Aging Institute, 2001). There has been what has been termed a worldwide "revolution in longevity" that raises serious social, political and labor issues on a global level. Due to improved health care and nutrition, people are living longer and this has led researchers to become concerned with the challenge of global aging. This state of global aging is best summarized in a report to the Commission on Global Aging (Global Aging Institute, 2001):

> "Although these advances (*in medicine and public health)* have greatly improved the quality of life for seniors, demographic developments beginning later this decade and continuing for the next fifty years will create significant challenges to this achievement that must be addressed in a timely manner. The surge of "baby boomer" retirements and further gains in longevity, combined with continued below-replacement fertility rates, will lead to a significant increase in old-age dependency ratios in all developed nations. … In sum, a demographic transition is occurring in all developed nations, albeit at

varying degrees from one nation to another, making it a global aging phenomenon – one that requires the attention of world leaders, the academic and business communities, electorates, and individuals." (p. 3)

Not only is there considerable strain on national pension systems due to increased longevity and mandatory retirement ages in most countries, but significant numbers of older employees are leaving the workforce and there are not enough new labor force entrants to fill the gap. Further, older workers who are leaving the work force in large numbers are taking valuable skills with them, causing a skill gap as well as a shortage of the number of new employees.

United States of America. These demographic changes that have been noted in the United States call for action in terms of social security and pension issues as well as addressing labor market problems. The so-called "graying" of America, represents a major demographic shift with the potential to dramatically influence this country's present and future economic and social systems (McGinnis, 1988).

The American workforce is faced with a dilemma. The continued aging of the US population, largely caused by the 76 million persons born between 1946 and 1964, will lead to similar aging in the workforce. The US Bureau of Labor Statistics indicates that the fastest growing group of workers will be those between the ages of 55 and 64 (American Association of Retired Persons, 2000). This occurs at a time when US workers are seeking to retire earlier in their careers.

Thus, there are significant changes between the current composition of the population and what is expected over the next 60 years (McEvoy & Cascio, 1989). As a result of the "baby-boom", increasing longevity, and decreasing birth rates, the population age 65 and over is expected to grow very rapidly over the next 60 years. A report from the General Accounting

Office (U S General Accounting Office, 2003) indicates that older workers will comprise an increasingly significant proportion of all workers. This GAO report, based on analyses from the Current Population Study, indicated that "thirteen percent of all persons over age 55 participated in the labor force in 2000, and according to the Bureau of Labor Statistics projections, this percentage is expected to rise to 37 percent by 2015. If these projections prove accurate, older workers will comprise nearly 20 percent of the total labor force by 2015" (p. 2). Further, the 1992 US Bureau of the Census data reports the population of people over 65 years old at 31 million, or 12.5% of the population. This is expected to grow, using the US Bureau of Census data middle series projections, to 54 million people over 65, or 20.2% of the population by 2020, and to 79 million, or 20.6% of the population, by 2050 (Leavitt, 1996).

Currently, the average age of the retiree is 63 years of age, down from 74 in 1910 (Burtless & Quinn, 2002). The same report identifies that one of the major causes for this trend is the increase in financial stability. Their results also would appear to indicate that older workers would prefer *not* to put off retirement. To further complicate this labor market and retirement issue in the United States, the average life expectancy has increased to 79 for males and 82 for females (Centers for Disease Control, 2002; Tepas & Barnes-Farrell, 2002). The result of this increase in life expectancy means that persons could spend up to 20 or more years in retirement. Tepas and Farrell feel that "personal perceived age" may need to be considered instead of chronological age, as employers and others determine how to cope with the aging work force.

When these changes in demographics are combined with projections for slower growth in the labor force, resulting from population aging and the reduction of new entrants into the labor force, concerns about future labor force shortages are increasing (Fullerton & Toossi, 2001; Rix, 1996, 2004). The concern rests on the assumption that as the baby-boom generation ages and

retires, the total pool of available employees will be insufficient to meet the labor demands necessary for continued economic growth. Society's ability to afford retirement benefits will also be impacted by this potential reduction in economic growth. As providing retirement benefits becomes more of a burden on society, the potential growth of the economy will be further inhibited (Kingson, 1996). The end result could be a continuing downward spiral of the living standards for US citizens.

Germany. The German population is going to shrink in consequence of dramatic demographical changes (Statistisches Bundesamt, 2003). Taking a closer look at the actual birth figures, it becomes apparent that there will be a loss in the future population. The birth rate is going to stay at a level of 1,4 children per female: every generation of parents could only be replaced by 2/3 children. To stabilize the present population, there must be a birth figure of more than two children per female. Consequently, there will be more death than births in the future of the German population. This means that the population is going to reduce from now circa 82,5 M people to 67 M people in 2050. Immigration counteracts against the decrease of population, but it will not be able to compensate the loss of German population.

Furthermore, the expectancy of life is going to increase in the future. The expectancy of a boy's life will be 81,1 years and a girl's will be 86,6 years until 2050. Comprising, the German population becomes more and more older, and there will be a reduction in the population.

The changes in the population have an effect on the allocation of employable aged people. Mainly the middle-aged group of employees, between 35-40, is going to become smaller about 31% until 2050. As a result of the constant birth rate by 1,4 children per female, the younger people in the population, between 20-35, are going to be reduced about 24%. On the other hand, the population aged between 50-64, is almost going to level off. Furthermore, the

generation born in the sixties is the largest age group today, aged between 35-39 ("baby boomers"). This group will represent the large future group of older employees. Thus the part of older aged employees is going to increase in the future.

Retraining or Retaining Older Workers

United States of America. For this paper and consistent with the empirical literature, older workers are classified as employees 50 and older. The main solution to this problem of the reduced labor market availability of skilled workers is that organizations have to either retain or retrain older employees. This does not mean that all older workers will wish to be retained or retrained, or that their employers will wish to retain or retrain them. There are clearly individual differences in older employees that will be necessary to use to determine which of the older workers will be retained or retrained. In either case, it is argued that one of the factors that will influence success in either retaining or retraining programs is the attitudes toward older workers in organizations. This paper describes the development of a scale for the measurement of attitudes toward older workers, conceived as a part of the climate/culture of an organization, and reports on empirical results of hypothesized relationships between this measure and other organizational variables.

Prior to discussing the proposed solutions of retaining or retraining older workers, it is important to recognize existing prejudices against older workers and explore how older workers are perceived. The increasing number of lawsuits by older workers is an indication of apparent prejudices against older workers (McEvoy & Cascio, 1989). Age discrimination lawsuits have been increasing since US Congress passed a landmark bill, in 1986, that effectively outlawed

mandatory retirement by removing the upper age limit of 70 for persons covered under the Age Discrimination in Employment Act (ADEA). The ADEA also made it illegal to refuse training for someone based solely on age. Although there were not many lawsuits initially under this provision, the numbers have been increasing (Lane, 2001).

Additional evidence can be found in the most recent Bureau of Labor Statistics survey of training by age group. According to the study, older workers receive less training than all other age groups (US Department of Labor, 1995). The apparent discrimination against older workers is also exemplified in a quote from a 1992 conference on US competitiveness and an aging workforce. At the conference, the suggestion was made that employers may deem older workers "unfit for faster paced jobs, unsuitable for retraining and too expensive to keep on the payroll" (Hall & Mirvis, 1993). These undesirable traits certainly appear to reinforce one another leading to a self-fulfilling prophecy. If older workers do not receive training, their skills will not keep pace with younger workers and the older workers will not be able to counteract the pervasive view that they are inflexible and unwilling to adapt.

It is important to examine the stereotypes of older workers as well as the empirical evidence regarding these stereotypical perceptions. Older employees are usually perceived to have a good work ethic and are more loyal than younger workers (AARP, 2000). However, one of the reasons that organizations have not focused on the retention or retraining of older employees is that myths and stereotypes persist, even though they are not supported by empirical research (Prenda & Stahl, 2001). These authors indicate that some of the more common myths are that older workers, as compared with younger workers, have poorer health, decreased mental and physical stamina, higher injury rates, and are more rigid and will not learn new skills. It is clear from empirical research that some cognitive functions and that physical strength, flexibility

and endurance decline with age. However, based on their review of the empirical literature, the other myths described are simply incorrect (Prenda & Stahl, 2001).

Warr (2001) in a first extensive review of the empirical literature since McEvoy and Cascio (1989), examines the evidence for behavior change in employment based on the following five features of a person: physical attributes, cognitive attributes, knowledge, personality traits, and motives. Although he finds evidence of deterioration in some of these features, there is no strong empirical evidence that work behavior and performance deteriorate with age (Warr, 2001). In spite of this empirical evidence, the perceptual stereotypes that older employees cannot learn new job skills and are just waiting for retirement persist. However, as noted in a research report from The Conference Board (Muson, 2002), "companies would be wise to re-examine HR practices and cultural attitudes that have made many older employees feel under-appreciated and no longer needed" (p. 6).

Given Warr's conclusion that job performance does not deteriorate with age and the forecasted reduced labor market availability of skilled workers, it seems clear that organizations must be prepared to retain or retrain older workers. Retraining of older workers is receiving more attention recently. Callahan, Kiker, and Cross (2003) computed a meta-analysis of the effects of training method on older learners' training performance, and concluded that instructional methods and instructional factors do affect training performance in older learners. Other research has examined the adjustment of older workers to plant closures (Mazerolle & Singh, 1999) and the effects of age on word-processing training and retraining (Charness, Kelley, Bosman, & Mottram, 2001). All of these studies support the retraining of older employees.

In spite of this positive evidence, the prevailing stereotype that remains is that older workers cannot continue to perform their jobs beyond a certain age and are just waiting for

retirement. Combined with the additional perception that older workers cannot be retrained, a negative climate or culture for the older worker has been created in many organizations. One of the significant empirical findings in the training literature has been the effect of the organizational culture and climate on the facilitation or constraint of transfer of training from off-the-job training sessions to the job (Baldwin & Ford, 1988; Bennett, Lehman & Forst, 1999; Burke & Baldwin, 1999; Lance, Kavanagh, & Brink, 2002; Peters, O'Connor & Eulberg, 1985; Rouiller & Goldstein, 1993; Tracey, Tannenbaum & Kavanagh, 1995). Thus, it seems clear that a receptive organizational climate would be necessary for the retraining of older workers. By logical extension, this empirical evidence would also support the notion that a receptive organizational climate is necessary to retain older workers with valuable skills.

One of the significant problems with the investigation of these hypothesized relationships between organizational climate and success in retraining and retaining older workers is the lack of psychometrically sound measurement of attitudes towards older workers. Although there have been measures developed to assess attitudes toward older workers (Bird & Fisher, 1986; Kirchner & Dunnette, 1954; Tuckman & Lorge, 1952), these measures are somewhat dated and are not focused on the retraining and retention of older workers in current employment settings. Although these earlier scales can provide some general beginning ideas for the measurement of attitudes toward older workers, a measure that is more reflective of the current employment situation in organizations is needed.

Germany. Because of major demographical changes also in the German society, it becomes more important to retain older employees in the working process. Older employees are more and more explicitly perceived as factors of success (Menges, 2000). Trends like early retirement and non-observance of the core competences of older employees decline in

importance antiquated and changes toward a more important view of older employees in the working life. The perceived primary challenge is to create a human resource management with a focus on long-term career including continuous education and training (Grauer, 1998). That means, employees must be encouraged to lifelong learning. Additionally, if companies anticipate these necessities in their personnel policy, prejudices against older employees in terms of low capability and low learning aptitude can be debilitated. Consequentially there must be a change of the current paradigm which prefers younger to older employees. Older employees should be seen as a change and not as a burden (Kruse, 2002)

In 2001, about 30% of all unemployed persons in Germany were aged 50 or even older. A 2001 study by the "Institut für Arbeitsmarkt- und Berufsforschung" (IAB) found out, that there are only less enterprises in which people, aged above 50 years, are still working (Koller, 2001). This interacting with older employees in German companies is a result of the companies' idea that old employees are less qualified, innovative, effective and creative as young employees. Companies often solved this problem by early retirements.

However, empirical studies show that capabilities and efficiency of labor are not centrally caused by the age, but in fact by conditions of employment, tasks and the learning aptitude (Bundesanstalt für Arbeit, 2001). Because of the demographical changes, the increasing scarcity of specialist workers and the increasing problem by financing the pension system there must be a rethinking in economy, politics and society. That means that there is an urgent need of a qualified way to integrate older employees in the working life again.

Employers should recognize the capabilities of older employees as an important resource and they should invest in these older people. Moreover, they should be more open toward hiring older employees. Furthermore, employers must be convinced by the idea of lifelong learning.

The acceptance by the companies towards hiring older employees depends on several factors. Especially, positive corporate experiences with older employees have an effect on future acquisitions of older employees. All in all, the willingness to hire older employees is bigger in small enterprises than in large companies. In the IT branch and the advertising industry, placement is more complicated than in the other branches, because there are often prejudices regarding to the necessary flexibility and the willingness for professional development. The companies complain of high salaries demanded by older employees, which are often higher than demanded by younger employees. A low productivity of older employees is often traced back to the fact that older employees are ill more frequently. In reality this prejudice could not be proved (Bundesanstalt für Arbeit, 2001).

Changing the structure of the economical growth was necessary since 1980. By that time, early retirement was the common strategy against high unemployment. For a long time, this way was socially acceptable to improve the chances for young people to find a job. It is questionable whether it was the best way to deal with the unemployment challenge. But acting that way fitted the collective perception of government, unions and companies.

Today, experts agree that early retirement comes along without major social benefit: morcover, today's situation as regards to economic growth and the unemployment figures show that early retirement has not a positive effect on the employment market. The OECD as well as the European Commission postulate that Germany should rise the labor force participation rate for solving the economic growth problems and dealing with the demographical changes. Thus, Germany should rethink its strategy – it should use the capabilities of older employees to deal with the economic and demographic problems. However, perception is not the only way changing the paradigm, reforms must be formulated to achieve a higher labor participation of

older employees in the enterprises. These reforms should give incentives for older employees staying longer in the working life as:

- Long-term professional development policy and personnel policy
- Global employment
- Market deregulation
- Reduction of the senior-privileges in the agreements on tariff
- Rearrangement of the social security contribution, especially for unemployment insurance
- Reform of the placement of jobless older people at the employment agency

A general use of the capabilities of older employees can be only successful by following an extensive economic strategy. Because of the demographical changes in Germany, the companies must integrate older employees in the modern working life, if they would stay competitive (BDA, 2002). In view of intellectual capability of older employees there are many different opinions in respect to older employees in German companies and in German society. The point of view still is that older employees are generally less capable than younger employees. This opinion is also spread in society, caused by the early retirement strategy, contrary to the academic perception (table 1).

An important factor for the aging process is a person's individual biography, covering e.g. the way of living or health and diseases. Thus, the fact that a person is old does not mean that the mental capabilities do not meet the requirements of work life. The older employees are not less capable than younger employees, but work differently. Over the years, especially capabilities which are often characterized as "experience" will build up with increasing age: know-how, ability to communicate, independence, sense of responsibility, and reliability (Metje, 2003).

Table 1
Competence Changing at the Age above 50 (Metje 2003: 41)

Competence	**Decreasing**	**Consistent**	**Increasing**
strategically thinking and acting			
market- and customer orientation			
Know-how			
Reaction-flexibility			
Experience			
Quality- and safety awareness			
Decision behavior			
Willingness to carry a risk			
Learning aptitude			
Ability to communicate			

Methodology

Primary purpose of this research was to develop a measure with psychometrically sound empirical qualities. As a general hypothesis, we expected a positive relationship between our measure of attitudes toward older workers and an organizational climate that supports innovation, growth, and transfer of training. As part of the development process of our measure, we also developed and tested a number of hypotheses regarding the relationship of our measure

of employee attitudes toward older workers and a number of organizational variables such as intention to leave. Since we collected data in 20 organizations, we will not discuss each of the additional hypotheses by organization, but rather examine the empirical relationships found as a part of the evidence for the validity of our measure.

General procedure: both countries

The initial phase of the project was to review the literature on older workers in order to gain background information for the project and to write potential items to measure this construct of "attitudes toward older workers". The interviewees were given an initial conceptual definition of this construct as comprising of two attitudinal dimensions – value or worth of older workers and retraining of older workers. A first step resulted in a total of 77 initial items written, which were reduced by editing to 22 items measuring attitudes toward older workers. An additional learning organization questionnaire had 13 items, so the final American survey contained 35 items. These 35 items comprised the "core survey". To cover some performance criteria, 9 further items were added in Germany, so that the German questionnaire covered 44 items. As will be discussed in the results section, the final scales were reduced through factor analysis.

Based on reviewing the organizational and management literature, some specific variables, such as organizational commitment, intention to leave, and resistance to change, had been identified to be tested in terms of their relationships with attitudes toward older workers and perceptions of a learning organization. Published scales from the literature were used to measure these variables. All measures selected had acceptable psychometric qualities in previous empirical studies. Again, space limitations preclude an extended discussion of each of these measures although their sources will be identified later.

Data were collected by students (USA) and by research assistants (Germany). All American students were required, prior to contacting an organization, to take a web-based course on ethics in research and pass an examination as part of the University's Institutional Review Board (IRB) procedures. All research projects received approval from the IRB. The German research assistants accepted the ethical guidelines for best practice in research of the "Österreichische Rektorenkonferenz" (ÖRK). All questionnaires were anonymous, and were either returned by mail to the MBA student or the instructor to maintain confidentiality.

Measures

As discussed, the questionnaires contained items measuring perceptions of the learning organization culture, attitudes toward older workers, and measures specific to each student's hypothesis. Biographical data were also collected as part of the questionnaire. Although there were differences in some of the biographical data collected by each specific organization, age, tenure, and gender data were collected as part of the core items on all questionnaires.

Depending on the specific hypothesis of the American student's project, data were also collected on the following variables: older worker stereotypes, overall job satisfaction, resistance to change, career advancement opportunities, organizational commitment, age of supervisor, intrinsic job motivation, cultural types of organizations (Cameron & Quinn, 1999), and intention to leave. With the exception of the cultural types measure, all other measures were taken from compendia of measures (Cook, Hepwoth, Wall, & Warr, 1981; Fields, 2002). All measures have established empirical reliabilities, however, sample reliabilities were also calculated on the data collected in these research projects. These values will be discussed in the Results section.

Sample Organizations

United States of America. Data were collected from six organizations by seven students in the 2002 class. Two students used the same organization for their data collection and hypothesis testing. The six organizations by type, sample size, and response rate for each organization were: (1) a public sector divisions of a state department, $n = 31$ (78% return); (2) a nursing home, $n = 37$ (42% return); (3) a manufacturing company, $n = 77$ (76% return); (4) a service company, $n = 42$ (38% return); (5) a medical laboratory company, $n = 43$ (39% return); and (6) a bank, $n = 115$ (41% return).

Data were collected from five organizations by it six students in the 2003 class. Again, two students used the same organization for their data collection and hypothesis testing. The five organizations by type, sample size and the response rate for each organization were: (1) a pharmacy college, $n = 54$ (49% return); (2) a rehabilitation residence organization, $n = 39$ (33% return); (3) a manufacturing and marketing company, $n = 34$ (64% return); (4) a financial services company, $n = 99$ (83% return); and (5) a law firm, $n = 37$ (99% rate).

Germany. The US questionnaire had been translated to German and re-translated to English. Some culture-specific questions had been added. Companies were called and asked to participate. Those of them which agreed to participate received the questionnaires by mail, email or in person. The questioning took place in nine organizations – each of them out of another industry: In 2003, the first round took place in six organizations, one year later, the second round took place in three organizations. In both years, the research assistants used the same questionnaire. The sample size is as follows: (1) a glass company, $n = 11$; (2) a company of the building industry, $n = 23$; (3) a chemistry company, $n = 4$; (4) an IT company, $n = 4$; (5) a service sector company, $n = 38$; (6) a bank, $n = 21$; (7) a nursing home, $n = 26$; (8) a public

office of the Department of Employment, $n = 6$, (9) a medical laboratory, $n=13$. The overall respond rates had not been exactly measured but lay in a range under 25%.

US Results

Factor Analyses

2002 projects. The data from all six projects were pooled for the factor analysis using principle components and a varimax solution with Kaiser normalization using SPSSX for the PC. This procedure was followed since we were interested in exploratory analysis of the underlying dimensions and data reduction to identify items to provide shorter measures of the variables. This pooling resulted in data from 345 respondents allowing sufficient power for the factoring procedure. Only the 35 items from the "core survey" were included in this analysis since the main purpose of this research was to identify measures of attitudes toward older workers as part of the climate of the organization. As such, the resulting factors were treated as hypothesized dimensions to be evaluated with the sample data from the 2003 projects for cross-validations.

Table 2
Factor Analysis of US Data of 2002 Projects (N = 345)

Factor I: Worth of Older Workers: Alpha = .93
IT 3. Employees do not respect older workers in the company[2].
IT 6. Promotions should not be given to older workers.
IT 11. Retraining older workers is a waste of time.
IT 17. Older workers do not want the challenge of retraining.
IT 19. Older workers do not want to change the way they work.
IT 26. Older workers work too slowly.
IT 32. Older workers are not receptive to new ideas.
IT 34. Older workers are past their peak of productivity.

Factor II: Retraining of Older Workers: Alpha = .95
IT 15. Retraining older workers takes more time than retraining younger workers.
IT 21. Retaining older workers is a waste of money.
IT 22. Older workers are difficult to work with.
IT 24. Older workers are not able to learn new skills.
IT 27. Older workers are not able to learn new technologies.
IT 29. Older workers do not want to be retrained.

Factor III: Emphasis on High Performance: Alpha = .87
IT 13. Coworkers are willing to listen to new ideas.
IT 16. This company is open to employees' suggestions for improvement.
IT 18. Supervisors ask employees for ideas about how to solve work-related problems.
IT 23. This company expects continuing excellence and competence from its employees.
IT 28. This company has a progressive atmosphere.
IT 30. This company expects high levels of performance.

Factor IV: Continuous Learning Climate: Alpha = .80
IT 1. Personal development is encouraged in our org.
IT 8. Supervisors encourage innovative thinking by employees.
IT 10. Coworkers consistently suggest new approaches to solving problems.
IT 14. Job assignments allow free time to explore new ideas for improving performance.
IT 20. Coworkers encourage each other to use new knowledge and skills on the job.
IT 33. Supervisors support continuous learning.

Factor V. Older Worker Opportunity: Alpha = .63
IT 4. Older workers are given the same opportunities for retraining as younger workers.
IT 7. Older workers are encouraged to attend training.
IT 9. In this company, older workers are treated fairly.

Factor VI: Older Worker Loyalty: Alpha = .82
IT 31. Older workers are more loyal than younger workers.
IT 35. Older workers are more reliable than younger workers.

[2] All negatively worded items were scored in reverse in order to have all positive factor loadings.

The results of this first analysis produced a six factor solution accounting for 66.9% of the common variance. The items, factor names, and Cronbach's alpha values are contained in Table 2. Of course, the values for the alphas are overestimated due to correlated error in the factoring procedure. However, the main purpose of this analysis was data reduction, and we reduced the number of items from 35 to 29. In addition, the first four factors and their items were consistent with our general expectations regarding the dimensionality of the questionnaire. The last two factors added less than 6% of the variance to the solution, and did not fit our pre-conceived definition of the constructs. However, they provided some hints as to additional items to be included in the next set of data collections for the 2003 research projects.

2003 projects. Based on the analyses of the data from the 2002 projects, 29 items were retained and six items were added concerned with loyalty and career advancement for older workers. Again, data from all five projects were pooled (N = 263) for the factor analysis using principle components and a varimax solution with Kaiser normalization using SPSSX for the PC. The resulting factor solution accounted for 59.7 of the common variance, and the factor structure generally supported the dimensionality of the factor solution from the 2002 project data. Thus, it was decided to combine the data sets and conduct a final factor analysis on the data from the 608 respondents. This was done to provide more stable estimates of the dimensionality of the data for both studies. The factor solution accounted for 60.3 % of the variance. The results along with the alpha values for this merged data set are contained in Table 3. The new alpha values provide empirical support for the internal consistency of these measures.

Table 3
Factor Analysis Results: Merged US Data 2002-2003 (N = 608)

Factor 1: Retraining of Older Workers: Alpha = .88
IT 15. Retraining older workers takes more time than retraining younger workers[3].
IT 17. Older workers do not want the challenge of retraining.
IT 21. Retraining older workers is a waste of money.
IT 22. Older workers are easy to work with.
IT 24. Older workers can learn new skills.
IT 27. Older workers are not able to learn new technologies.
IT 29. Older workers want to be retrained.

Factor 2: High Performance Worth of Older Workers: Alpha = .88
IT 3. Employees respect older workers in the company.
IT 6. Promotions should be given to older workers.
IT 13. Coworkers are willing to listen to new ideas.
IT 23. This company expects continuing excellence and competence from its employees.
IT 26. Older workers work too slowly. (negative loading)
IT 30. This company expects high levels of performance.
IT 32. Older workers are receptive to new ideas.

Factor 3: Continuous Learning Climate: Alpha = .84
IT 1. Personal development is encouraged in our organization.
IT 8. Supervisors encourage innovative thinking by employees.
IT 10. Coworkers consistently suggest new approaches to solving problems.
IT 14. Job assignments allow free time to explore new ideas for improving performance.
IT 16. This company is open to employees' suggestions for improvement.
IT 18. Supervisors ask employees for ideas about how to solve work-related problems.
IT 20. Coworkers encourage each other to use new knowledge and skills on the job.
IT 28. This company has a progressive atmosphere.
IT 33. Supervisors support continuous learning.

Factor 4: Older Worker Loyalty: Alpha = .81
IT 31. Older workers are more loyal than younger workers.
IT 35. Older workers are more reliable than younger workers.

The results of the factor analysis identified four dimensions that are quite similar to the ones identified by analyzing the individual data sets. However, the differences are worth noting. Although Factors 1 and 3, Retraining of Older Workers and Continuous Learning Culture are the

[3] All negatively worded items were scored in reverse to have all positive factor loadings.

same as found with the earlier analyses, Factor 2 appears to be combination of an emphasis on higher performance with a positive view of the worth of older workers. Factor 4, even though comprised of only two items, regarding the loyalty of older workers appeared in every factor analysis. We interpreted these results as supportive of identifying these four factors as measures of the climate/culture of an organizations.

Correlational Analyses

Given the satisfactory values of the alphas for the four climate variables in Table 3, four measures were created for all the data sets. Most of the 11 projects had all of the items for the four variables, but in some cases there was a single item missing. However, reliabilities for the four measures were calculated for all 11 data sets, and they were all in the acceptable range of .75 - .90. Thus, scores for the four variables were calculated and the intercorrelations between these four variables along with the additional variables unique to each project were computed. This was done to help establish the validity of these measures in terms of their expected relationships with other organizational variables.

The average intercorrelations[4] between the four main variables are contained in Table 4.

[4] Correlations for all 11 projects were transformed to Fisher's *Z* and averaged.

Table 4
Average Intercorrelations for Climate Variables

	RETRNOW	HIPERFOW	CONLRN	OWLOY
RETRNOW				
HIPERFOW	.573			
CONLRN	.138	.445		
OWLOY	.051	.065	.010	

Note. All correlations were converted to Fisher's *Z* and averaged. RETRNOW = Retraining of Older Workers; HIPERFOW = High Performance Worth of Older Workers; CONLRN = Continuous Learning Climate; OWLOY = Older Worker Loyalty.

As can be seen, there is a strong positive relationship between the "retraining of older workers" and "high performance of older workers" variables as well as a strong positive relationship between the high performance of older workers" and "continuous learning climate" variables. The relationship between the "retraining of older workers" and "continuous learning climate" variables is lower but still positive. This pattern of relationships provides support for the expected positive relationship between these measures of organizational climate. The lack of a relationship between the "older worker loyalty" variable and the other variables is troublesome, and clearly more research is needed to determine where older worker loyalty fits as part of organizational climate.

Examination of the correlations between the four climate variables with the variables within each study indicated interesting results[5]. The relationships between the age of the

[5] Although they are not the central topic of this paper, the correlational results from the 11 projects are available from the first author.

respondents and the four variables was somewhat inconsistent. Age was significantly positively related to "continuous learning climate" in six studies, however, most of the significant relationships between age of the respondents and the other three variables with more focus on older workers were negative. This was certainly expected and supports the general expectation found in the popular and empirical literature. Organizational commitment, intrinsic job motivation, and overall job satisfaction had significant positive relationships with the four climate variables. The other significant relationships were more inconsistent. It is important to recognize that most of the projects had small samples, and thus, the relationships found must be considered hypotheses for future study.

German Results

Factor Analyses

Also the German research was interested in reducing the large number of the variables in order to find out independent factors. The German factor analysis, performed with SPSS for the PC, was based on varimax solution with Kaiser normalization. Only coefficients which loaded more than 60% on the factors were chosen for the factor definition. As described earlier, the German questionnaire consists of 44 items. The elimination procedure provides 5 factors: Factor A is called "Continuous Learning Climate", mainly dealing with activities to train employees. Factor B is called "Retraining of Older Workers", emphasizing personal development for older employees. Factor C is called "Older Worker Experience, Loyalty, and Competence", stressing the competitive advantage of older compared to younger employees. Factor D is called "High-Performance". Although it only consists of two items, it is a central indicator for market success.

Factor E is called "Opposition to Retraining of Older Workers". Interestingly, this is the factor which isolates the provisos against older employees. The items, factor names, and Cronbach's alpha values for the construct reliability are contained in Table 5. Our results offer our items as reliable for the particular factor.

Table 5
Factor Analysis of German Data (N = 146)

Factor A: Continuous Learning Climate: Alpha = .83
G 1/IT 1.[6] Personal development is encouraged in our organization [7].
G 2. Our company encourage human resources development.
G 6/IT 5. Supervisors do not refuse to accept suggestions from employees.
G 9/IT 8. Supervisors encourage innovative thinking by employees.
G 16/IT 14. Job assignments allow free time to explore new ideas for improving performance.
G 19/IT 16. This company is open to employees' suggestions for improvement.
G 21/IT 18. Supervisors ask employees for ideas about to solve work-related problems.
G 32/IT 28. This company has a progressive atmosphere.
G 38/IT 33. Supervisors support continuous learning.
G 42. In our company personnel work is future-oriented.

Factor B: Retraining of Older Workers: Alpha = .86
G 20/IT 17. Older workers do not want the challenge of retraining.
G 22/IT 19. Older workers do not want to change the way they work.
G 26/IT 22. Older workers are difficult to work with.
G 28/IT 24. Older workers are not able to learn new skills.
G30/IT 26. Older workers work too slowly.
G 31/IT 27. Older workers are not able to learn new technologies.
G 34/IT 29. Older workers do not want to be retrained.
G 37/IT 32. Older workers are not receptive to new ideas.
G 40/IT 34. Older workers are past their peak of productivity
G17/ IT15. Retraining older workers takes more time than retraining younger workers

Factor C: Older Worker Experience, Loyalty and Competence: Alpha = .78
G 12. Older workers are more willing to assume additionally responsibility.
G 18. Older workers can rate risk better than younger workers.
G 29/IT25. Older workers produce higher quality work than younger workers
G 36/IT31. Older workers are more loyal than younger workers.

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[6] Due to another order of the items in the US/ German questionnaires, the G numbers (German questionnaire) refer to the American items (IT) from table 2.
[7] All negatively worded items were scored in reverse in order to have all positive factor loadings.

G 39. Older workers are more competent.
G 41/IT35. Older workers are more reliable than younger workers.

Factor D: High-Performance: Alpha = .64
G 35/IT 30. This company expects high levels of performance.
G 27/IT 23. This company expects continuing excellence and competence from its employees.

Factor E: Opposition to Retraining of Older Workers: Alpha = .68
G 7/IT 6. Promotions should not be given to older workers.
G 13/IT 11. Retraining older workers is a waste of time.
G 25/IT 21. Retraining older workers is a waste of money.

US-German Comparison

It is important to know that all negatively worded items were scored reversely to reach all positive factor loadings. Thus, the formulation of items changed as well (e.g., "it is difficult to" changed in "it is easy to"). In the German factor analysis, this only occurred with one item. In the US factor analysis, it obviously occurred more often. Therefore, the 1 to 1-comparison of the factors is difficult for it can happen that the same item loads positively on a factor in one country (and is kept as it is) and loads negatively in the other country (and is reversed). While the US factors were labeled with Romanic numbers (2002 data) and Arabic numbers (1,2,...for the whole US data), the German factors are labeled with initials (A,B,..) to avoid confusion.

Interestingly, the German results resemble to a high degree the US results from the 2002 study. Although the 2002 US project resulted in six factors and the German study in five factors, they are quite close: Factor A (Germany) resembles factor IV (US), factor B (Germany) resembles factor II (US), and to a minor degree factor I (US). Factor C (Germany) resembles factor VI (US). Factor D (Germany) resembles factor III (US), although the German factor only consists of two items. Comparing the German results from the factor analysis with the US results of the whole study, it appears that the German results seem to be more negatively stuffed than

the US results. This means, in the US, the originally negative loading on negatively formulated items had been reversed quite often. All in all, comprising some central and crucial attitudes concerning older people in companies seem to be culture-free. Nevertheless, there is evidence that the German working life is more afflicted with prejudice against older employees.

Discussion

The primary purpose of this research was to make a methodological contribution: to develop measures of attitudes towards older workers with solid psychometric properties and to find out whether they are overall measures or country-specific. This effort conceived these attitudes towards older workers in the US as well as in Germany as an aspect of organizational climate that had important implications for the retention and retraining of older workers. The results of the analyses of the US projects indicate that we have established reliable measures of four variables that comprise an important part of the organizational climate facing older workers. Further, the initial analyses of the intercorrelations of these four variables with other organizational variables provide initial strong evidence for their validity. It seems safe to conclude that these measures can be used to assess the degree of favorableness of attitudes regarding the worth and retraining of older workers within an organization.

The importance of this research can be seen in terms of its value toward helping to solve the critical labor shortage of skilled employees as the baby boomers reach retirement in the US and in Germany. Organizations are going to experience a shortage of available workers in the labor market in general. More importantly, there will be a shortage of people with the skills possessed by the retired workers.

It seems obvious that organizations will need to retain and retain their older workers. In the US organizations have already established a number of flexible employment programs to help to solve this problem. These programs to increase the number of older workers generally include part-time employment, rehirements as contractors, flextime arrangements, and increased efforts to hire retirees (AARP, 2000).

In Germany, a growing number of companies focus on this topic. One of the projects, for example, in the engineering industry is called "demographic initiative" and aim to create different situational models for the integration of older employees in the workforce. In another example, the "Institut für Industriebetriebslehre und Industrielle Produktion" at the University of Karlsruhe initiated the Europe-wide study RESPECT ("Research action for improving Elderly workers Safety, Productivity, Efficiency and Competence Towards the new working environment") in 2000 (Frisch, 2002). The main objective of this study is the advancement of health and the ability to work of older employees. It contains an analysis in terms of the present situation and best practice of the present working-models for older employees and develops alternative models on the basis of field studies. The results are guidelines for companies and politics. Older employees bear a lot of comparative advantages, as the RESPECT study shows:

- Older employees are thinking in coherences.
- For older employees, the career ambitions do not longer stand in front, thus they are more willing to work in teams.
- Often they show more loyalty against their employer as their younger co-workers.
- Older employees are specialists in networking.
- In particular, they do a good job at internal interfaces, because they have the capability to overcome mental boundaries.

- Their self-perception is more realistic and they know their limitations and their options.

The German factors as well as the US factors seem to address these points more detailed and contribute to point out their relevance.

Research Roadmap

In the future, two serious problems still have to be addressed: The first of these problems is that not all older persons can be offered continued employment. Up to now, there has been very little empirical research examining individual differences in the selection of older workers, or the validity of these selection procedures. The second problem is whether or not younger employees of the organization have positive attitudes toward the continued employment of older workers, and how this will affect the continued employment of older workers. As our research indicates, these attitudes influence the climate of the organization; and as seen in the literature, this climate is quite important for the transfer of training. Thus, research needs to focus on these two issues, and it also has to enforce intercultural comparisons not only in respect to the measures, but also in respect to the effects.

Limitations

This research, like most research, has its limitations. Although the structure of the factor items used seems stable over a number of different organizations, there are certainly some organizations where these items will need to be revised and supplemented to capture the relevant aspects of the organizational climate for supporting the retraining and retaining of older workers.

Further, data collection in two countries underlies the bias of national cultures. However, standardization of the questionnaires, instructions and cover letters to the respondents helped to control errors. Future studies using these measures should work toward standardized survey administration, and be certain to calculate internal consistency reliabilities for the measures in each new sample. However, the studies are a good start for future research aimed at finding employment programs for older workers that can successfully solve the need to retain and retain skilled older employees.

Conclusion

The methodological approach of our studies resulted in interesting factor constellations and pointed out the relevance of the underlying challenges in companies. In terms of practical applications, the measures developed in this research can be an aid to management in developing and implementing programs to retain and retrain older workers. As noted in a report from The Conference Board (Muson, 2002), "companies would be wise to re-examine HR practices and cultural attitudes that have made many older employees feel under-appreciated and no longer needed" (p. 6). The prevailing stereotype that seems to exist in most organizations is that older workers cannot continue to perform their jobs beyond a certain age and are just waiting for retirement. Combined with the stereotype that older workers cannot be retrained, this has created a negative climate or culture in many organizations for the older worker. Therefore, a significant factor in the success of the implementation and management of any recruiting, retraining or retention program will be the assessment and change, if needed, of the organizational climate to support such programs. The challenge for management is not the creation of new programs to

meet the labor shortage, but to more effectively manage the climate so that any program involving continued employment of older workers can be successful. The measures developed in this research can provide a good assessment of the favorableness of the organization's climate for older worker employment programs and provide diagnostic information for change where needed. Important for the enterprises is the maintenance to keep the knowledge and the know-how over the generations to be competitive. Therefore, the personnel policy for the future must cover the following aspects:

- The factor "age" should be integrated in the objectives and the human resource strategy of the companies.
- There must be a fair approach in dealing with corporate demographics.
- Corporate culture must show openness towards older employees.

Moreover, a personnel policy, which aims to integrate all generations into the workforce, should differentiate the planning horizon into short-term, middle-term and long-term. Only in this manner companies can asses the future developments which might become major challenges.

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